

21 Plate  
A BOOK OF  
Perspective & Geometry,

BEING

The A B C, and first degree of all good ART.

THE

Learning of which comprehendeth in it many Notable Arts, need-  
full and necessary for every Artificer and Workman.

*For as no Perspective Workman can make any Work without Archi-  
tecture, so neither can the Architecture without Perspective.*

WHICH

PERSPECTIVE

IS

Inspection or looking into by shortning of the sight, making  
it to show further then in effect it is.

Which Subtill and Ingenious Art, being difficult and troublesome  
to be set down in writing, and especially the body or modell of  
things which are drawn out of the ground. For it is an Art which  
cannot be so well exprest by figures or writings, as by under-  
standing, which is done severally, beginning with small things  
and so proceeding to greater, till the full Art be perfectly shewed.

*By which is shewed in figures and figures, as much of Perspective and  
if the Workman will, he may shew his reason or purpose by  
Reason and Figure.*

And seeing Perspective Art is nothing with-  
out Geometry, they are both bound together, that the  
Workman may be able to rule and help himself therein.

AND

Forasmuch as the best manner of the understanding of this Art  
I shall first endeavour to shew in the beginning, and at last  
I shall help young beginners that know little  
or nothing thereof.

This Second Book of Perspective, containing the  
criticisms of Perspective, teaching the  
use of the Perspective, and the use of the  
Perspective of the Perspective.

By the Author of the first.

LONDON,

Printed by J. B. for W. B. at the Book-stall in the  
Royal Exchange, 1657.

# A BOOK OF NEGATIVE & COMPLEMENTARY

The 18th and 19th centuries of the 19th century

For the purpose of the present work, the author has selected the most important and interesting facts of the history of the human mind, and has arranged them in a systematic and chronological order, so as to show the progress of the human mind from the earliest times to the present day.

## NEGATIVE

The first part of the work is devoted to a consideration of the negative side of the human mind. It begins with a discussion of the nature of the human mind, and then proceeds to a consideration of the various faculties of the mind, and the manner in which they are exercised. The author shows that the human mind is not a passive organ, but an active one, and that it is capable of a great deal of originality and invention. He also shows that the human mind is not a perfect organ, but an imperfect one, and that it is subject to a great deal of error and mistake.

And the first part of the work is devoted to a consideration of the negative side of the human mind. It begins with a discussion of the nature of the human mind, and then proceeds to a consideration of the various faculties of the mind, and the manner in which they are exercised. The author shows that the human mind is not a passive organ, but an active one, and that it is capable of a great deal of originality and invention. He also shows that the human mind is not a perfect organ, but an imperfect one, and that it is subject to a great deal of error and mistake.

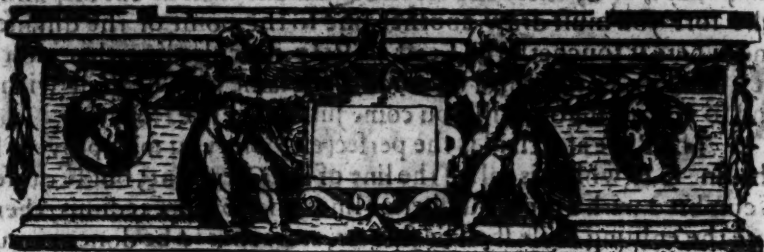
AND  
The second part of the work is devoted to a consideration of the positive side of the human mind. It begins with a discussion of the nature of the human mind, and then proceeds to a consideration of the various faculties of the mind, and the manner in which they are exercised. The author shows that the human mind is not a passive organ, but an active one, and that it is capable of a great deal of originality and invention. He also shows that the human mind is not a perfect organ, but an imperfect one, and that it is subject to a great deal of error and mistake.

The second part of the work is devoted to a consideration of the positive side of the human mind. It begins with a discussion of the nature of the human mind, and then proceeds to a consideration of the various faculties of the mind, and the manner in which they are exercised. The author shows that the human mind is not a passive organ, but an active one, and that it is capable of a great deal of originality and invention. He also shows that the human mind is not a perfect organ, but an imperfect one, and that it is subject to a great deal of error and mistake.

And the second part of the work is devoted to a consideration of the positive side of the human mind. It begins with a discussion of the nature of the human mind, and then proceeds to a consideration of the various faculties of the mind, and the manner in which they are exercised. The author shows that the human mind is not a passive organ, but an active one, and that it is capable of a great deal of originality and invention. He also shows that the human mind is not a perfect organ, but an imperfect one, and that it is subject to a great deal of error and mistake.

And the second part of the work is devoted to a consideration of the positive side of the human mind. It begins with a discussion of the nature of the human mind, and then proceeds to a consideration of the various faculties of the mind, and the manner in which they are exercised. The author shows that the human mind is not a passive organ, but an active one, and that it is capable of a great deal of originality and invention. He also shows that the human mind is not a perfect organ, but an imperfect one, and that it is subject to a great deal of error and mistake.





THE  
SECOND BOOK  
Treating of  
PERSPECTIVE:

I N WHICH is shewed in Figures and by reason, as much of  
Perspective Art, that if the Workeman will, he may  
declare his conceit or purpose by Reasons  
and Figures.

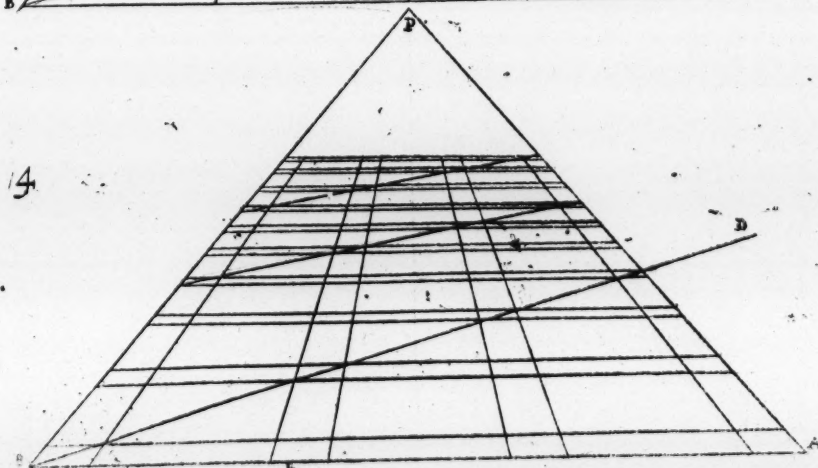
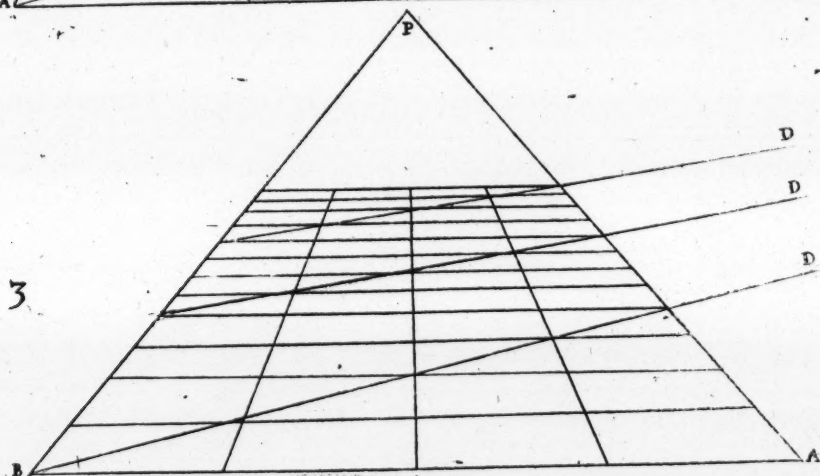
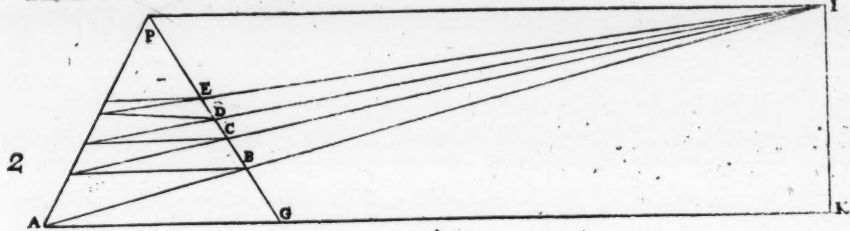
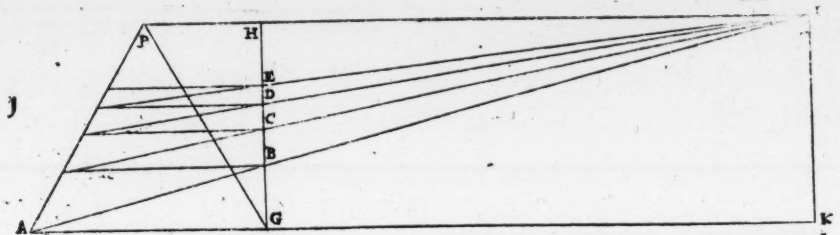
**F**IRST, To the end that men by small matters  
may attaine to greater, therefore I will begin to  
shew how to shorten a four-corner'd thing, from  
whence all the rest shall be derived. Then the  
base of this four-square thing, shall be A G, and  
the height of the Horizon (as I said before) shall  
be imagined according to the sight, and that shall  
be P, whereunto all the lines do run, as the lines of the sides A P and  
G P, then at the one end of the Quadrant you must let a Perpen-  
dicular line, which is G H, which done, then draw the Base A G  
long enough, and then out of the Horizon draw a Parallel or as a  
quidistant line from the Base, as far as you will, that the eye or sight  
shall stand from that which you will look on; for how much the  
more you will have the four square thing to seem shorter, so much  
further you must goe with your sight I from H, to behold the four-  
square thing. And then taking H I for the distance, from the point  
I to the corner A draw a line, and where the line cutteth through  
the Perpendicular line H G, that is on B, there the termination of  
the shortning of the four square thing shall be, as you may see in the  
figure. But if you will make more four squares one above the o-  
ther, upon the same Horizon or point; then you must draw another  
line from the shortning point of the four-square or Quadrant, to the  
letter I, and where it cutteth through the Perpendicular line afore-  
said,

said, that is at C, there the second Quadrant shall be cut off, and in like sort you must draw another line to the point of the distance; and where it toucheth the Lead, or Perpendicular line, that is on D, you shall make the third Quadrant, the same may be done with E, and so you must go untill you come just under the Horison.

2 The Rule aforesaid is the perfectest, and you may prove it by the line G H, which is called the line of the Quadrant; but because it is cumbered with a great number of lines, and so more tedious, therefore the ensuing Rule shall be shorter, and easier to be done than the other: for when the Base A G is drawn, and the two side lines make a Triangle A P G, then you must draw the parallels of the Base and of the Horison long enough; and as far as you will stand from the work to see it, so far you must set the Perpendiculars I K from the poynt G, then you must draw a line from the point I to the point A, and where it cutteth through the line G P, there shall be the termination of the first shortened Quadrant; and if you will place more Quadrants upwards from that Quadrant, you must doe as I said before: and although there are other ways to shorten a Quadrant, yet will I follow this Order, as being the shortest and easiest to be set down in writing.

3 A Man must also use himselfe unto divers distances and groundts, and therefore you must make the ground following, which is of three Quadrants high, in this manner. First, you must draw the line A B, as long as the breadth of the work shall be; which line or base, must be divided into so many equall parts as are needfull, which being all drawn to the Horison or point, then you must place the distances as far as you desire, according to the Rule aforesaid; for here is no place to set it in, although it is a length and a halfe from the Base, as you see it marked with 1; which Base, because it is of four parts, therefore the first quadrant containeth sixteen small quadrants, which are found by the line B D, for where that line cutteth through the four lines, which goe to the poynt, there you must draw the parallel over, that thereby the sixteen quadrants may be formed: But if you will set other quadrants upon it, then (as aforesaid) you must draw another line to the distance D, and where that cutteth through the other lines that reach to the poynt, that shall be the termination of the second quadrant, containing in it also four times four quadrants: The like must be understood of the third quadrant (and more besides if need be.) But you must also understand, that the lines marked D run all the distances, as is taught before.

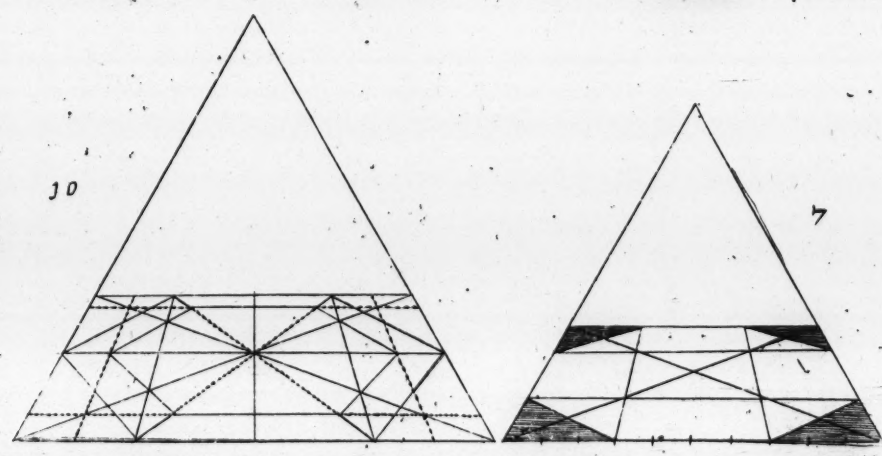
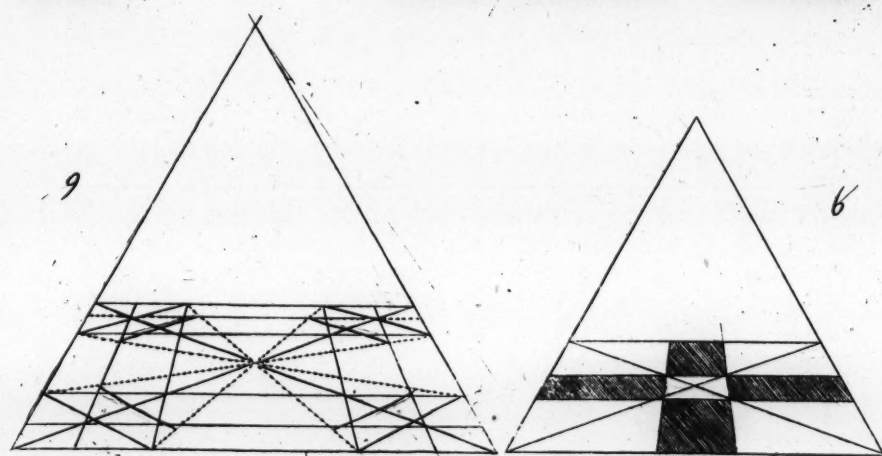
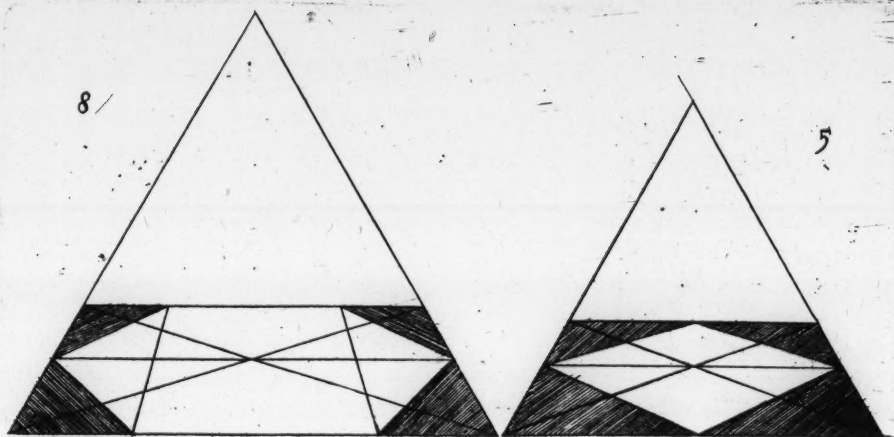
4 If you will make a pavement with great quadrants to be cut or compassed with felsen, felsen or lifts, as you will term them, then upon A B you must divide the felsen or quadrants and draw them all to the Horison: then you must imagine the distances as you are taught before: and the line B D being drawn from the point B to the poynt of the distances, then by cutting through of the Horisonial lines, it will shew the terminations of the quadrants, Felsen, or Borders. To draw the Parallels, then if you will make the like quadrant somewhat higher, then you must draw another line to the distances;













distances; and where it touched the Horizontall or Radiall lines, there also you must draw the Parallels through; for you must also do with the third, and the poynt of the distances of these figures stand as far from A, as the line or Base A.B is long; If you will make divers formes in these quadrants, as Roots, Crosse, six poynts, or eight poynts, I will shew the manner of them particularly, because I will be as brife herein as I may.

103 This figure is a quadrant containing in it a Root or an other quadrant, which with the poynts thereof toucheth the sides of the uttermost quadrant; whereby it is but halfe so great as the uttermost quadrant, as I have taught you in the first Book of Geometry, and the manner to make this, is thus: First, you must make a quadrant (as you are taught before) with his distances; and in this quadrant you must draw two Diagonall lines, and also the right crosse lines, whereby you may easily find the Root, as you see it in the figure. In this last you may make the Roots in the other quadrant before set down, that is, to draw Diagonall and crosse lines in them without taking other distances.

106 In this figure there is a crosse shewed (to make it) you must divide the lowest line or Base of the quadrant in five parts; of the which five parts, one part is the breadth of the crosse, which being drawn to the poynts, the Diagonall will shew you the Parallell lines of the crosse, to use what need is.

107 The eight poynted figure you may see in Perspective work is divers formes, which formes are all difficult enough; but that I may shew the easiest way so near as I can in this my writing; therefore I have set down the manner thereof hereunto annexed, which is every case, and that is thus: The quadrant being made as shewing, you must divide the Base into ten equal parts, and on each side you shall leave three parts, and in the middle four parts; then two lines being drawn to the Horizon, you shall find the divisions of the Parallell lines, by the Diagonall lines, whereby you may close up the eight corners, as you may see in the figure.

108 The shortest way to place this eight cornered quadrant in Perspective work, is thus: When the quadrant according to the Base aforesaid, is placed in shewing, then you must make four equal parts of the Base, whereof two shall be in the middle, and on each side you must leave one, and then draw the lines upwards in the Horizon to poynts; then you must draw the Diagonall lines, and in the middle where they meet together, you must draw a Parallell line clean through, by which you shall find all the poynts to make this six cornered figure.

109 Now I have shewed you how you shall make single or plain Perspective work of the corners of the corners, and eight corners. Now I will shew how you shall make them double, that is, that every single figure shall have his double. When you have made the single figure as you have learned in the last chapter, and that is much as you will, then you shall draw a line through that you must draw upon the side, and draw the same line to the Horizon; and where the Diagonall lines cut through it, then you

oT B must



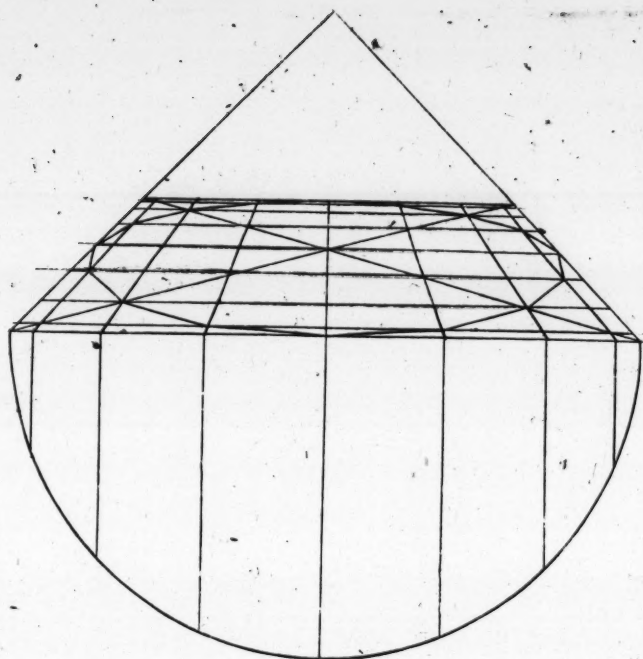
must draw Paralell lines both under and above; and then draw two Diagonall lines more, out of the four innermost poynts or corners of the six cornerd Superficies; and so you shall find your terminations to shut or close up your smallest six poynts or cornerd Superficies. Which second Diagonall, Paralell, and Horizontall lines are all drawn with prick; for a difference from the first lines, that you may know them one from another.

10 The like must be done with the eight cornerd Superficies or Perspective work, for when the same is made within a four square, making the Compass of what breadth you will, according to the rule store said; then out of every poynt or corner of the eight square, a small line being drawn to the Center, you shall find the termination to shut up the innermost eight square; and then, when from poynt to poynt the lines are drawn, then one square or Compass is full made. This eight square forme may be changed into a round, touching the middle on either side, or else without over the poynts for corners; a good workman may easily draw a Circular shortning round line with his hand.

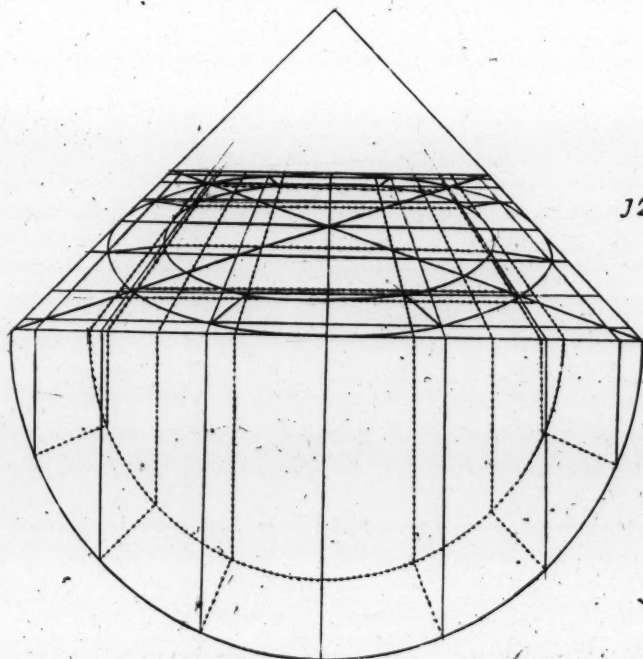
11 Although I have said before that a man may make a round Circle about an eight square, yet for more security you may by this way attaine to a more perfection therein; for that the more poynts or sides the Circular forme hath, the round Compass or Circle will be the fuller. But to make this Figure, it is necessary to make halfe a Circle under the Base, and to divide the Circumference into as many parts as you will, so that they be even; in this forme the halfe Circle is divided into eight parts, so that the whole Circle must be sixteen parts; which being done, you must set Perpendicular lines in all the parts of the Circumference, as far as to the Base of the shortning quadrate, these parts being elevated to the Horizon, and two Diagonall lines drawn in the quadrate, they by cutting through the Horizontall and Perpendicall lines, will show you the Paralell lines. Then if you will draw a little Diagonall line, beginning at the middle poynt of the Base, from the one side unto the other, and so from the one poynt to the other up and down over the poynts, then the figure will be set out, as you see them here; whereby it will be evident you can draw a round forme with your hand, for it is impossible to be done with a Compass to make it shorter well. This is a figure you must be expert in, and you must also understand well, and so you must know that I have before set down, before you proceed further; for they will serve you for many pieces of work hereafter, as you shall both see and find in the true.

12 When you understand the figure aforesaid perfectly, then you must proceed further, and first the round Circle set with an edge according to the breadth that you will have; you must also make the same halfe Circle, and the aforesaid parts of the great Circle drawn towards the Center, will come into the halfe Circle; the whole parts of the small Circle being also set down in Perpendicular lines with prick, to darken the other lines, and thus the same that are drawn in the Horizon. Then by cutting through of the Diagonall lines, you shall find the Paralell lines.

To



11

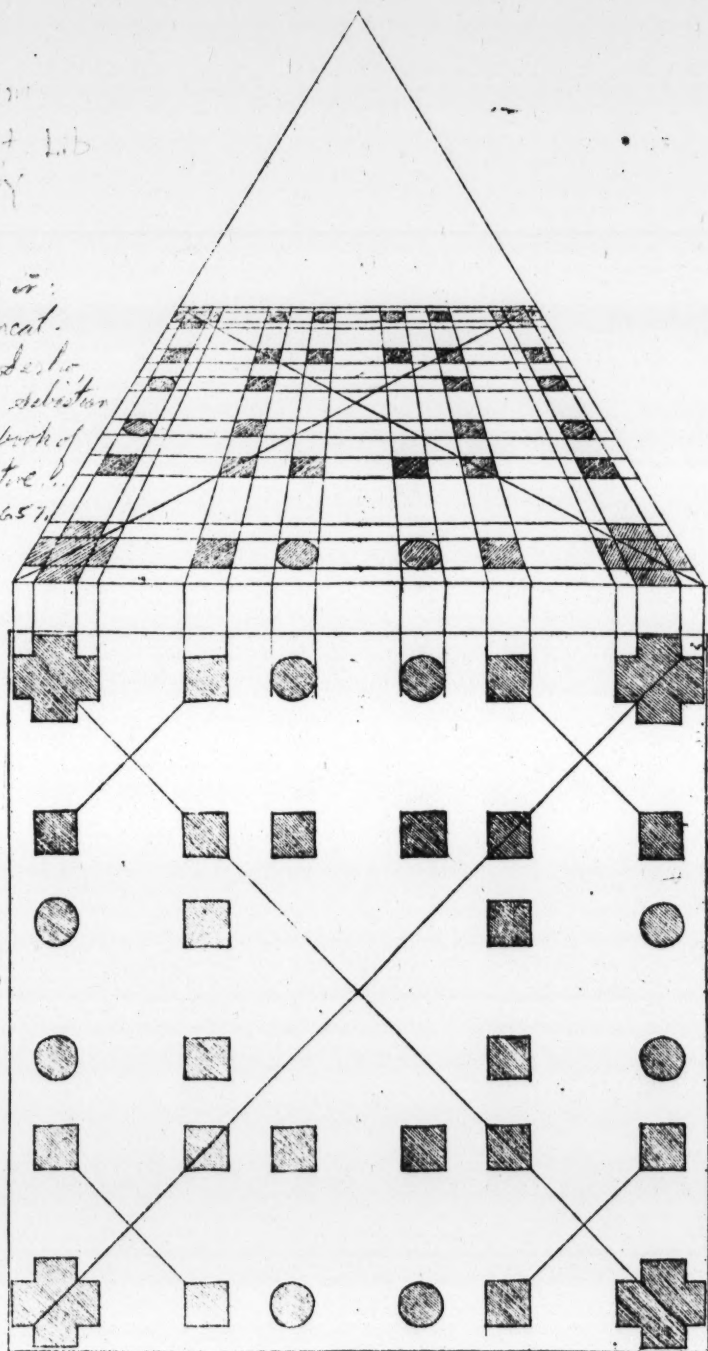


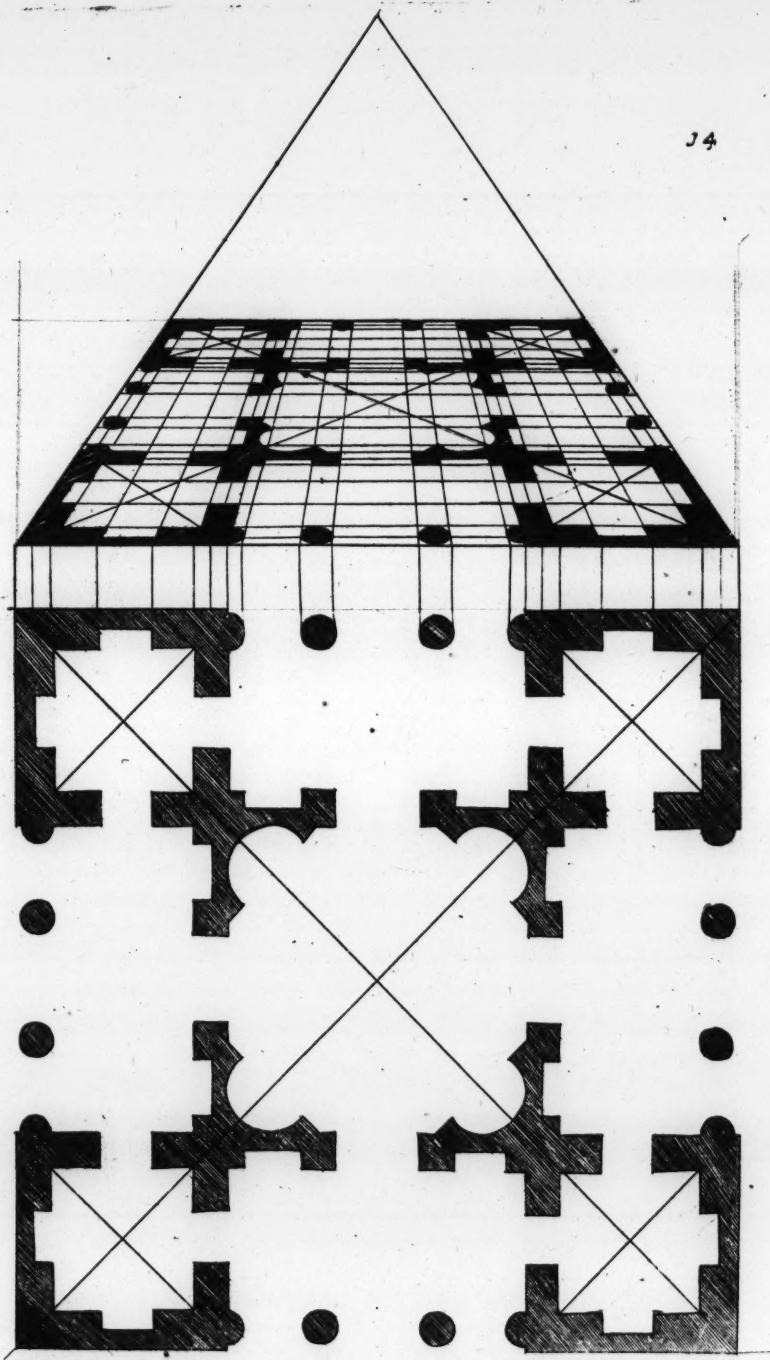
12

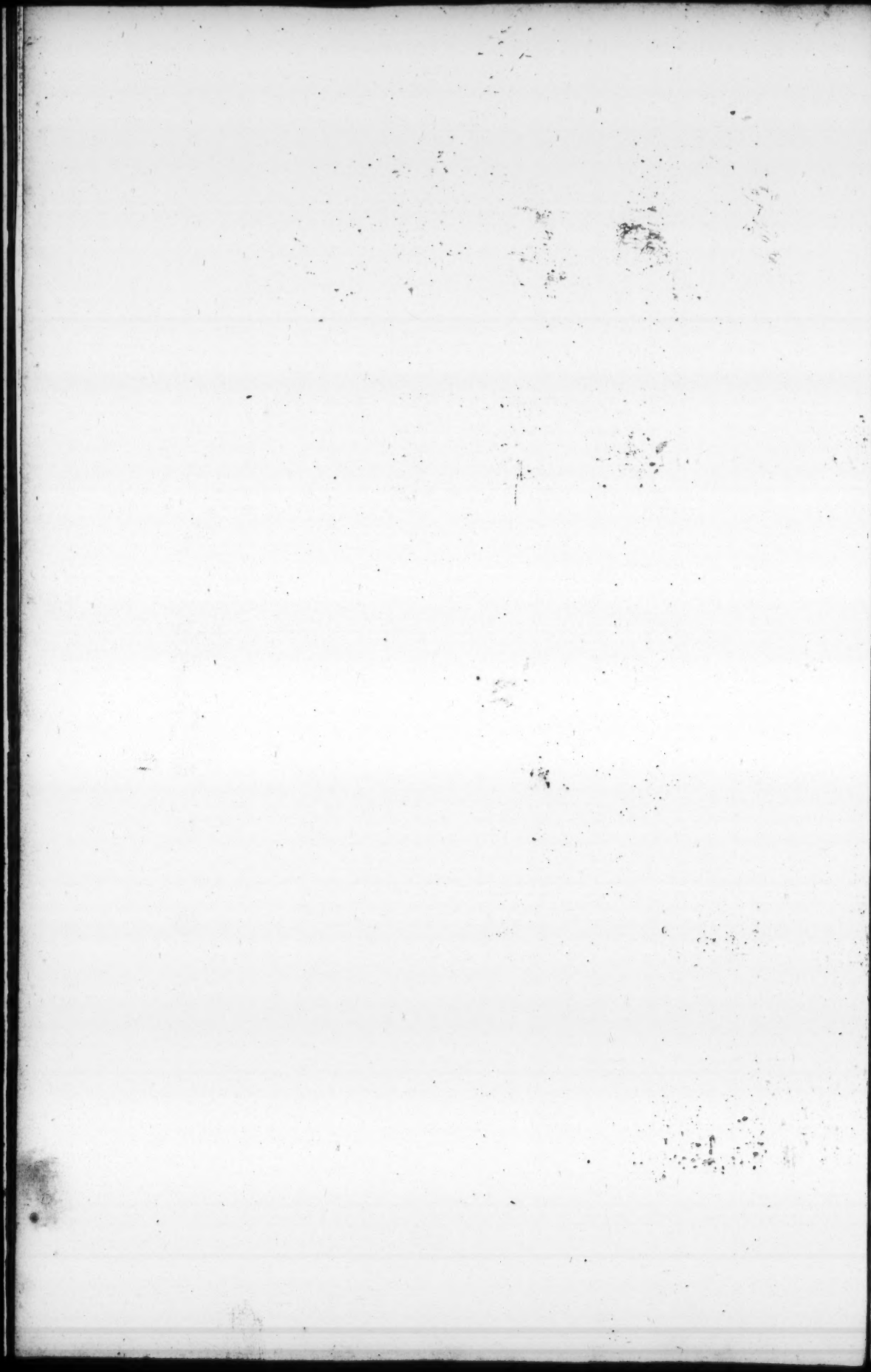


From  
Brit Lib  
344

Resp in:  
Unat.  
Lect.  
debiator  
A book of  
perspective  
1657



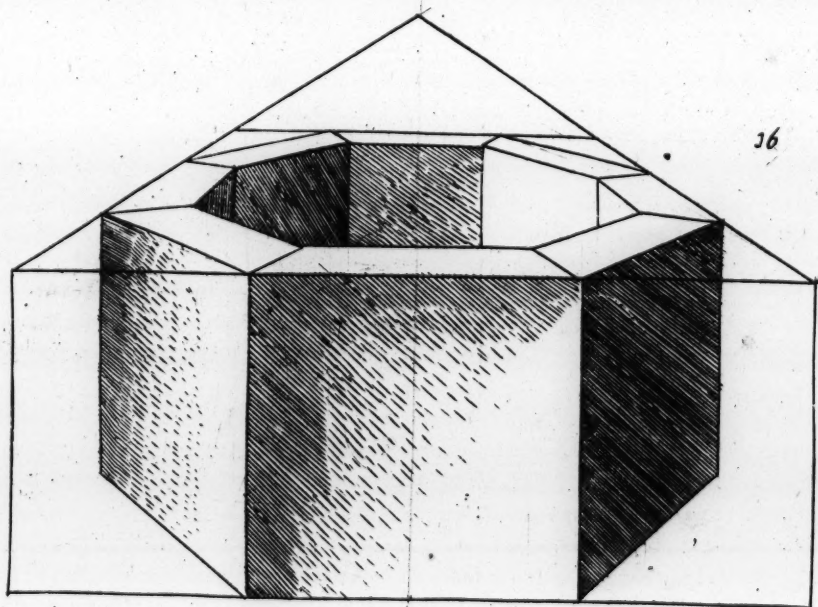
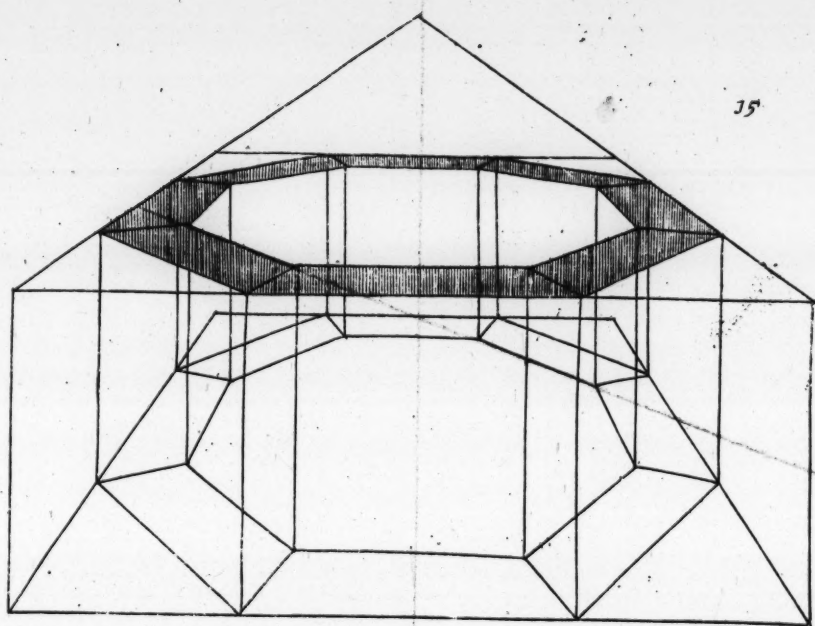






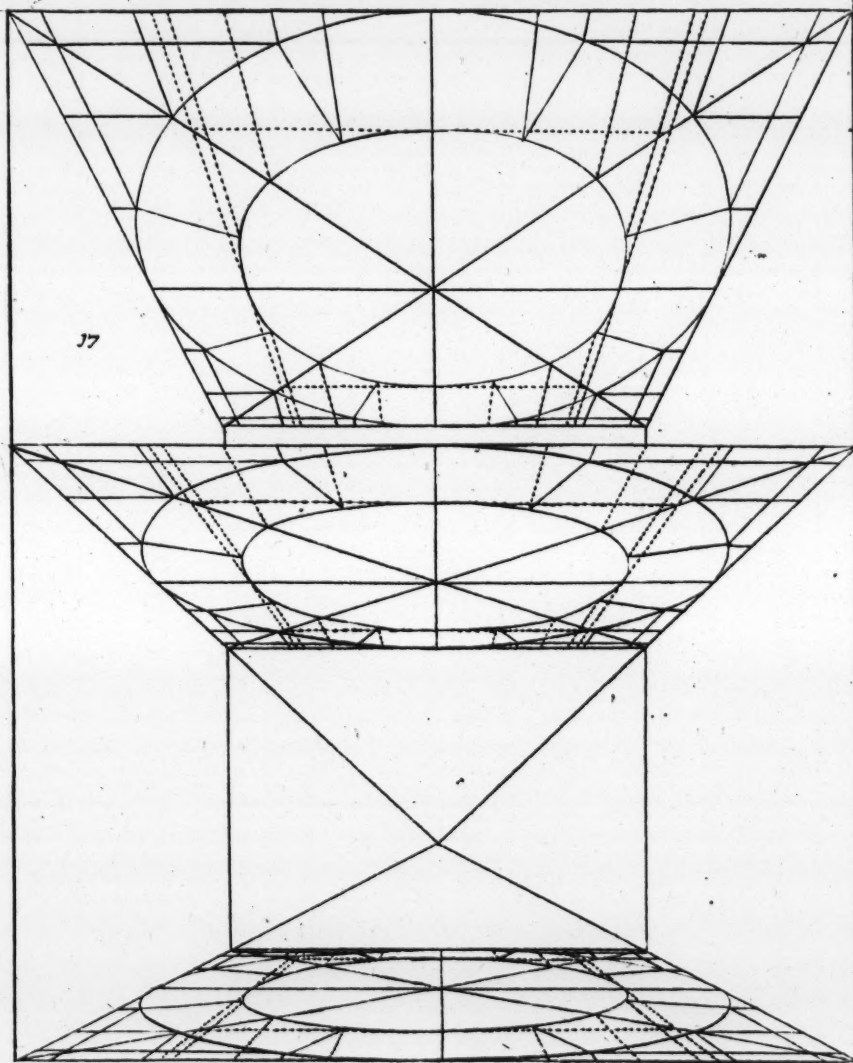




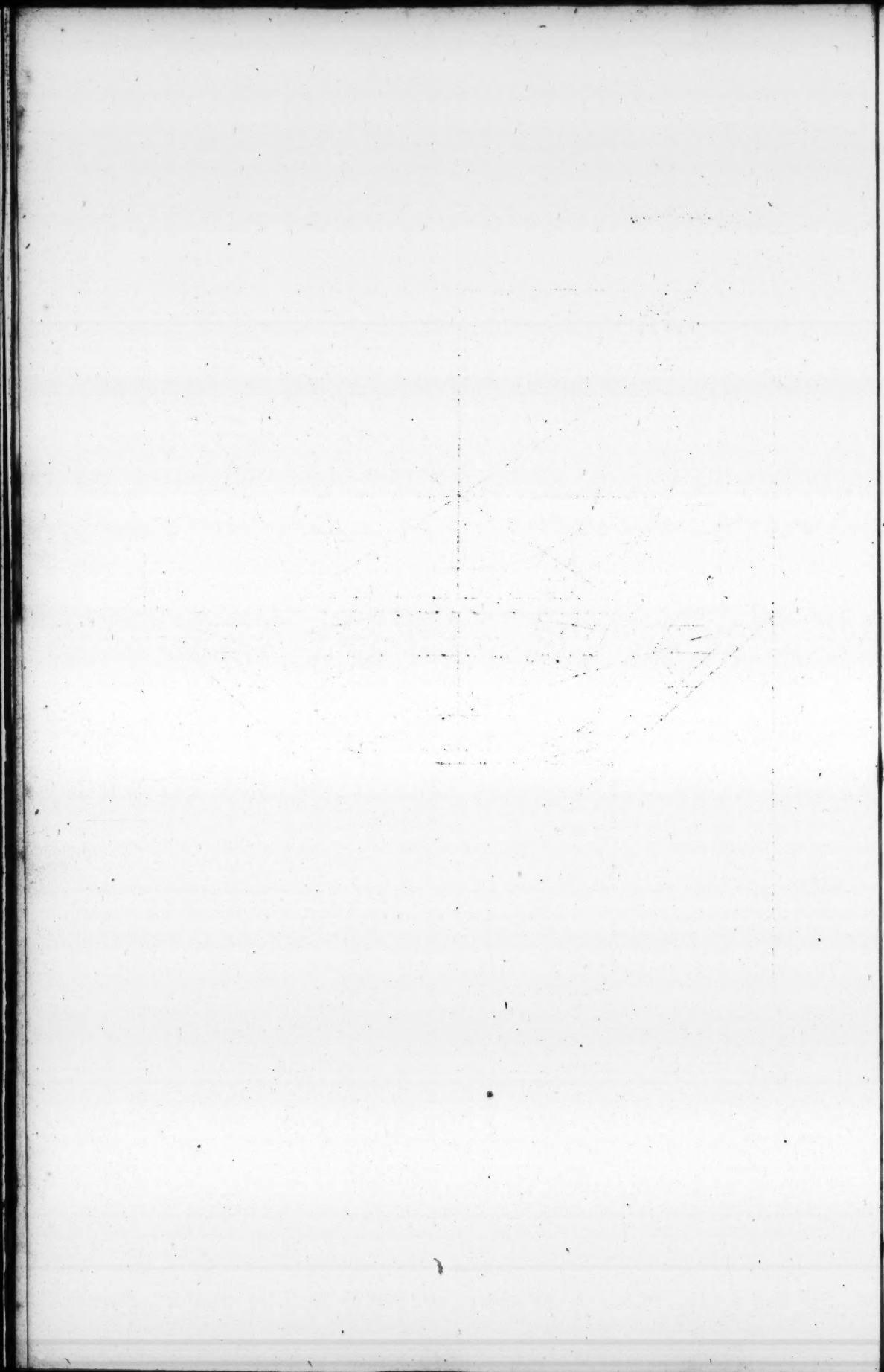




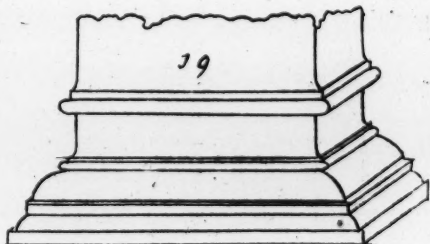
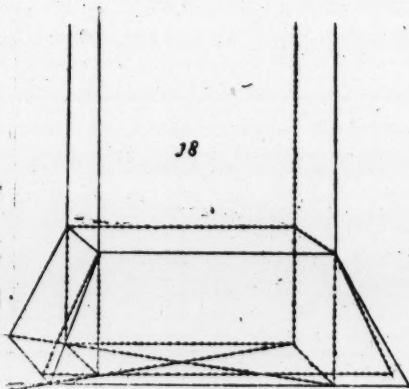
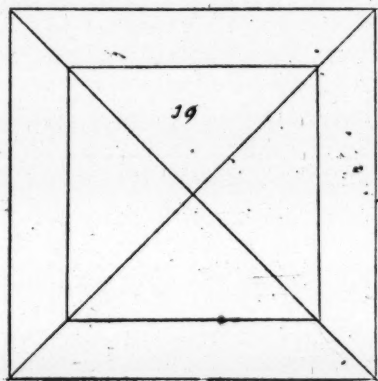
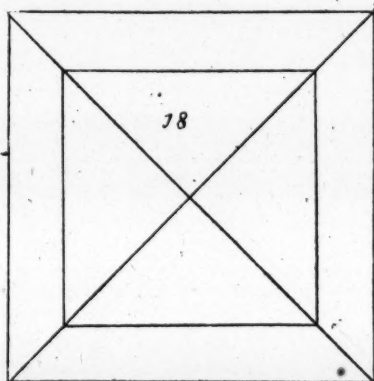
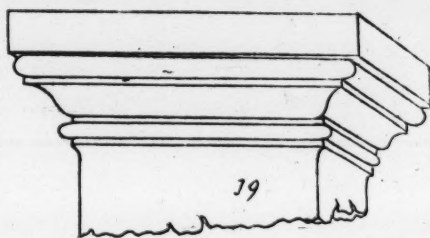
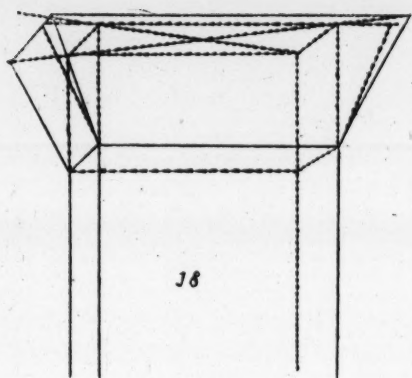




17









not weary, and spare no paines till you are perfect in them, because that the bowing or Arches of gates and other things will seem hard unto you, as I will hereafter shew you; notwithstanding that they take their beginning altogether from these.

But if any man that desireth to learn this Art, will at the first understand these figures, as some bluntly will take upon him to do it, I believe certainly, he will be put to an *non plus*, and deceive himselfe; but if by learning all the former things, he proceedeth unto these as well in Geometry as in Perspective Art: Then, I say, he is of a very grosse understanding, if he cannot understand or conceive these figures, or the figures that hereafter follow.

These three figures, to speak truth, are but Superficies; nevertheless, if you draw Perpendicular lines from all the terminations, as well within as without: then you shall have a through cutting, or open body, and the innermost lines covered, then they will be a Massy body: And wonder not, gentle Reader, nor let it be strange unto you, though I doe sometimes make a long discourse of some things, for (as I said before) they are not onely learned by many words and great paines, but it is also necessary that they were shewed unto some men plainly by drawing them before them, that they may the better conceive them.

18 The most part of great Rivers or water-falls that fall down from high Hills or Mountains, by means of tempests with great force and power, when they enter into a Valley, then sometimes they run out of their Channell, and so much ground as they beneasure upon the one side, so much they loose againe on the other side: and so doth Perspective work in cornered things, for that as much as a man loseth of the poynt or corner whereon he looketh, so much greater the other poynt or corner sheweth this standeth out, which is shewed in the figure, 18, hereunto annexed.

The Reader must then mark, that the square in the middle signifies the thickness of a square Column or Pillar, and the border that is without and goeth about it signifies the thickness or bearing out of the Base and the Capitall. The square under this platforme is the Base, and the uppermost square is the Capitall, the manner how to shew them I will thus say. You must make the Pillar first before without thickness, and make it you shall have the Base and Capitall, making the thickness by drawing lines from either side alike, but you must draw these lines with compasses, having let down the shew you: then draw the Base of the Pillar which you will have seen towards the Horizon, and having draw how thick the thickness or bearing out of the Base is, by the rule that are showed in the first part of Perspective, then you shall have the shewing round of the Pillar, which you must lightly draw with a Compass, then draw a line through the middle of the Pillar, and from the Base below, which is the thickness of the Pillar, draw a line to the Horizon, which you shall see in the distance, and so the thickness of the Pillar shall be shewed, and the thickness of the Perspective shall be shewed, and the thickness of the space between

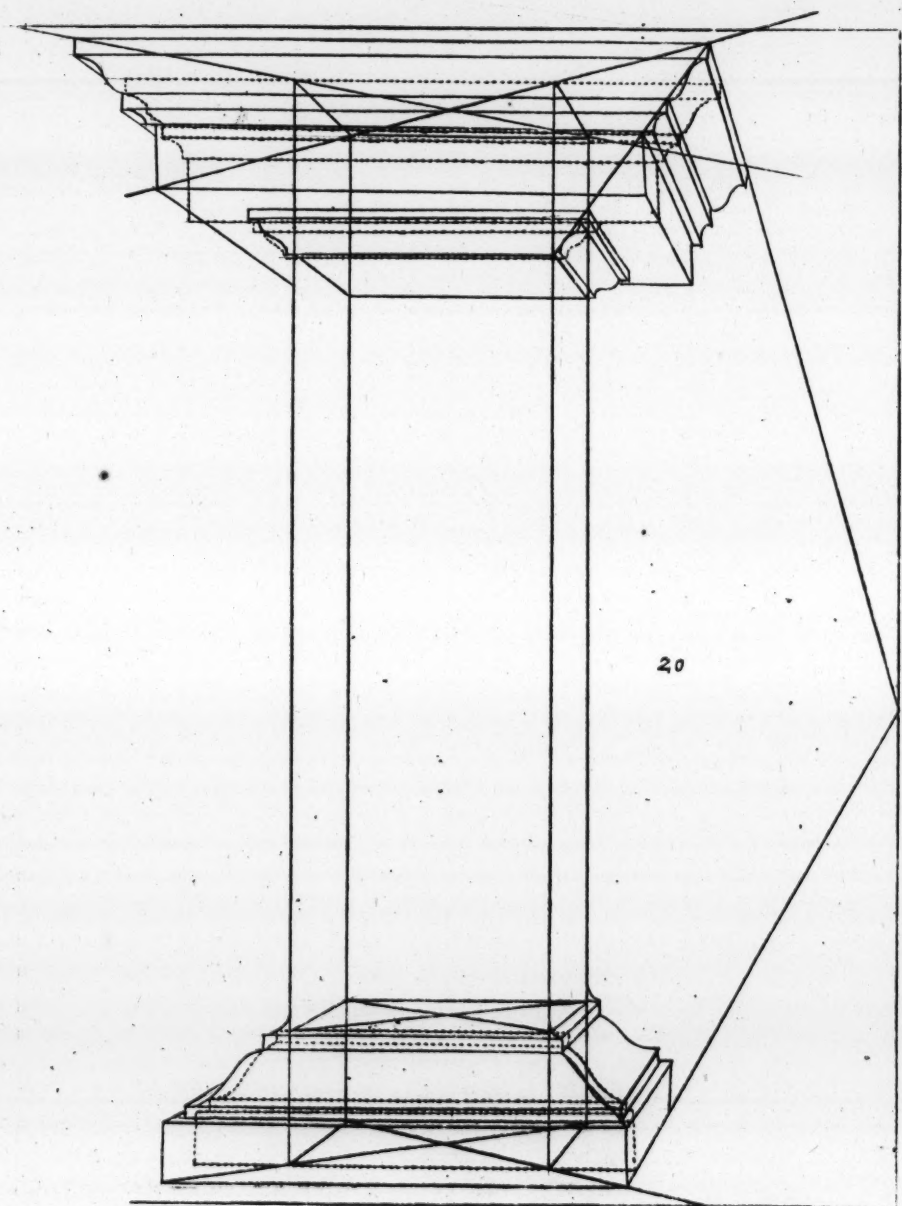
between the poynts, and the full back line; then from the terminations to the other uttermost poynt of the Bases, you must draw a Paralell line under the ground of the Pillars, so long that it may touch the Diagonall lines, and there you shall find that which is taken of from the Bases on the one side, and given to them on the other side, and the projecture of the Bases sheweth, that the one poynt is draw inwards, and the other cometh further out, then the uppermost line of the Bases being also to the Horifon; then upon the shortning side by a line you shall find the third part of the Bases below, and that which is here spoken of the Bases, you must understand the same also of the Capitalls.

19 These other three Figures are the same which are shewed before; the first were hollow, but these are perfect and solid with all their members, and although that in the figures before I have not shewed how you should forme and frame these members, which in truth would be a very confused and troublesome thing to set down in writing; therefore I have only shewed the first terminations, that a man may keep them well in his memory, and in these present Figures I have shewed how they shew in a mans sight, that you may see the effect that they work: but from henceforward because (as I said before) it is a troublesome thing, I will make another forme of them with all their members by dark lines; and then (according to my ability) I will set down the manner how to find the terminations of the members but after another, for all of them grow a little one over, or more than the others.

But you must consider, that these Bases and Capitalls on the one side give inward, and on the other side beareth out, which you must well remember, that you may first be well instructed herein touching that which you will make. For it is true, that the Theorick consisteth in the understanding, but experience is gotten by practise and right use of handling. Therefore the most notable Painter *Leonardo da Vinci* was never pleased nor satisfied with any thing that he made, bringing but little work to perfection, saying, the cause thereof was that his hand could not reach the understanding of his mind. And for my part, if I should doe as he did, I should not; neither would I suffer any of my works to come forth: for (to say the truth) whatsoever I make, it pleaseth me not: but (as I said in the beginning of my work) that I had rather sterill in work than fruitless, which hath pleased God to bestow upon me, that I have here and there made the earth without any fruit, and although I shall not please thereby such as are curious, to see down the ground and perfection of all things, yet I shall help young students that know little or nothing thereof, which hath alway been my intent.

20 For the (as I said before) of Perspective, I thought have wrote, it would be great labour and much waste of time in the construction of the parts of anatomy, and especially because they doe always wax greater as they come further away, as well those which we beholde from beneath upwards, as those that we beholde from above downwards; yet I have not spared to make this 10 Figure,

and



20





and to forme and proportion it with all the members and parts thereof, that you may the better understand it. In the first figure but one, next to this, I have shewed how you shall finde the terminations of the poynts of the Projecture, which are made plain without any members; the easier to conceive how things wax bigger when they come further outwards. But now I think that men understand it well, I will shew the means and manner how to finde the inlarging of all the members particularly by themselves, every one according to their greatnesse or smalnesse of their Projecture.

And first, You must frame this Base with all the members, and with the right Projecture thereof, to be without any shortning before, yet you must draw it lightly with a piece of Lead, or some other thing, as it is shewed unto you in the Figure with prickes; then in the ground or foot of the Pillar you must draw the two Diagonall lines long enough out, and thereby (as I said before) you shall finde the diminishing and the increasing of the particular parts of the crests of the said Base, whereas the undermost line or foot of the crests of the Base, bear much more broader and longer then those that are marked with the prickes; then at each corner of the Crest of the Base you must draw an upright line almost as high as the first crest of the Base (although I have done it) but upon the innermost poynt not to comber the work within: then you must draw the uppermost corners of the first Crest with prickes also, toward the Horizon, which downwards will touch against the two upright lines; and these shall be the terminations to close or shut up the second great Crest with a full black line: then draw another black line from the innermost poynt of the Crest upwards to the Horizon, and thus the shortning Crest shall be closed.

And as this Crest or Plinth is closed and drawn so all sides with black lines, so you must doe with all the other lines of the Base. For when from the uppermost corner of the first marked Base you draw a heeling line to the innermost corner of the greatest Crest with the black lines, by it you shall lightly finde the terminations of all the parts or members drawing the corners of the first Base towards the Horizon. And when you have found all the innermost corners of the Base, by the Horizontall line you may easily finde the second, and by the Parallell lines the third of all, although by the lines of the distance you may finde the fourth, and so on what nearest, as you may see by the Diagonall lines. Now in this way I will not speake of that distance which is not in the figure, but by standing, may be seen with the eye.

That which is to be done to the Base, you must also understand of the Corners, which are every thing contrary to the former, as the Perpendicular lines below, which are through the Horizontall or Radiall lines from the eye, and all the other lines and members upon the Base, shall be done, as you may hence see that I have done in the Figure, that is to say, by the eye, by the eye, and by the eye, be assured of this, that the eye is the best way to find the distance, that by the eye, the eye is the best way to find the distance, that by the eye, the eye is the best way to find the distance. And in this way, as I have said, that a man shall be able to find all things in one day, by the eye.

nice

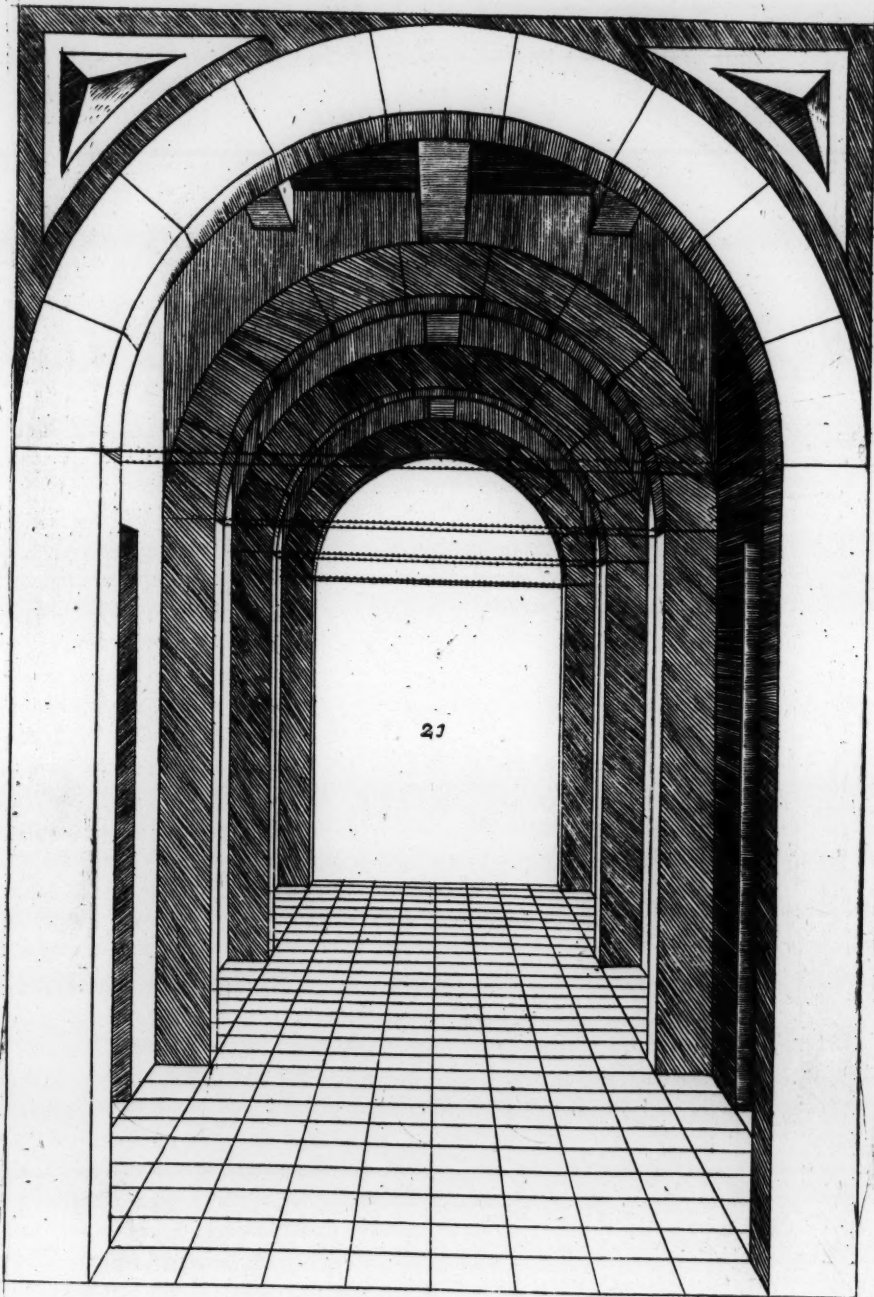
nice you may make all Cornices, be they higher or lower, harder or easier, always drawing every member and part towards the Horison, as it should be done.

Although there are divers manners and wayes to place Columns one behind the other, standing upon one ground in Perspective wise; thereby to make Portals, Galleriey, and other things, yet this hereunto annexed is the easiest.

First, You must make a Pavement with a quantity of four cornerd Quadrants, as it is also shewed in the beginning of this Book, which may be made of such breadth, as you will: Say that these four square stones are two foot broad, which shall be the thicknes of a Pillar: between the two first Pillars beneath in the breadth, there shall be eight square stones, and the height of the Pillars made of what quantity you will; and they being raised toward the Horison, then you must draw two severall lines over both the Pillars, and then out of the middle of the first line you must make two halfe Circles above upon the flat side before, and divide them in as many parts as you will; which parts shall be drawn to the Center of the halfe Circle, standing in the uppermost line: then out of the middle of the two severall lines you must draw the lesse halfe Circle, and all terminations of the flat Arch being drawn to the Horison, then the first Arch or Gate is made: the other two Pillars upwards shall also stand eight Quadrants distant from the first Pillars, which will make a more cornerd place on all sides, containing 64 square stones: and you must doe with this Gate as you did with the first, only (when they are all of one wideness as these are) you need not divide the Arch rising for the Horison all lines of the stones of the first Arch will shew you the terminations of all the other Arches, and also how long the Gallerie must be, and how many Arches it must containe. I have placed an Archer here in the side, because I would not cumbr you too much at this time; but I will speak thereof hereafter.

The two Doors on each side are both partly covered with the Pillars, but the smallness of them is off the Quadrants, besides that from the middle of the Doors to the Pillars on each side there is two Quadrants, one for the half of the Pillar, and the other half you must suppose to be taken by the Pillars. The reason where the Archer is set betwixt the Chambers, is because I would not have although I write not particularly thereof. I have not likewise for the Bales but the reason for these Pillars being there should not darken them too much but in another place I will also write thereof.

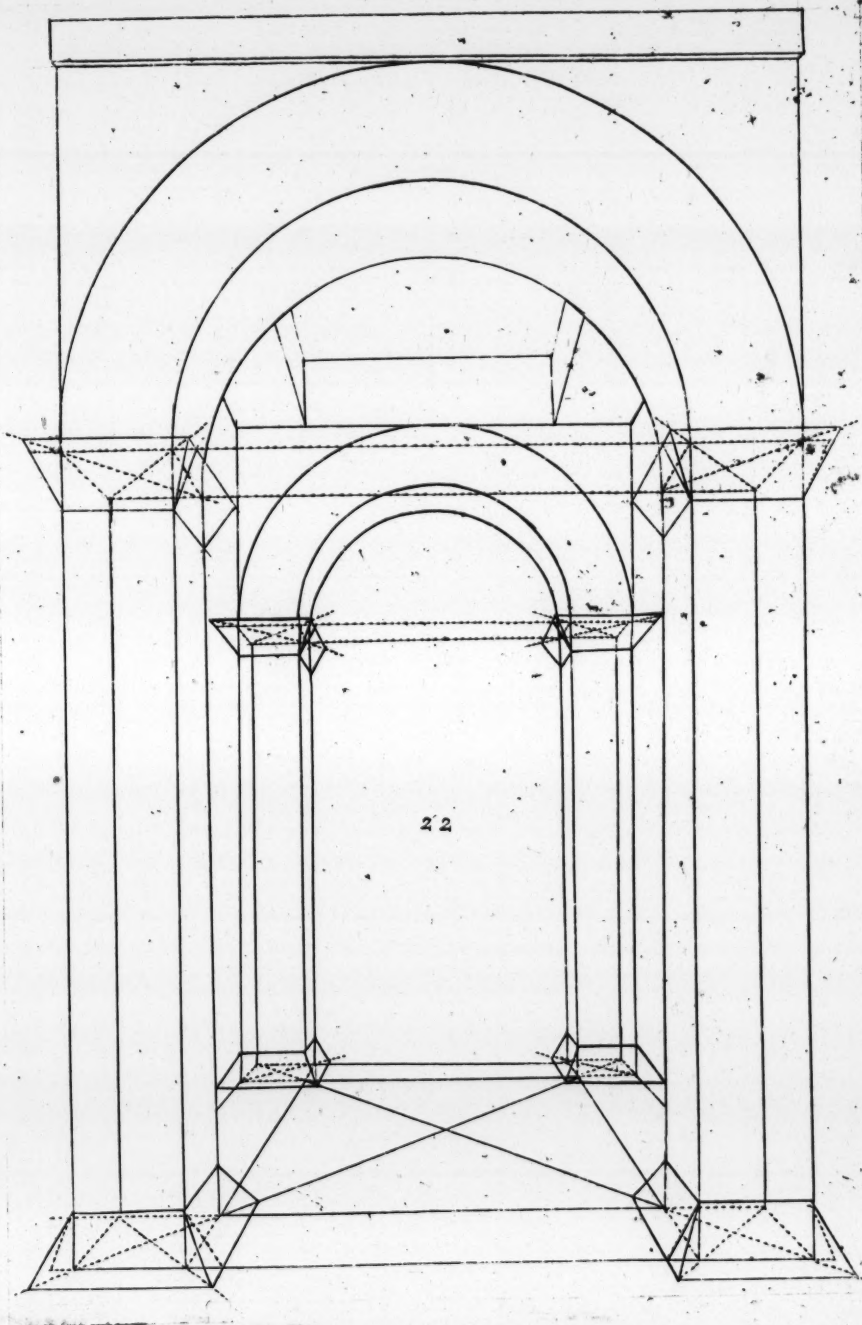
Then I have set a Archer to shew how to joyn their Gates and Capitalls to one, whereas in most other places I have spoken before, and shewed how they should be one side, and fall or decrease in height on the other side: but now I will shew how to doe them: I have writt it downe in figures, as it is unto you in effect, you would the rather understand it: but as it is down in writing or Figures as I doe, that you may be able to know and learn them, it is requisite to correct of them some things; and that you may the better discern and perceive the point of the thin lines from



21

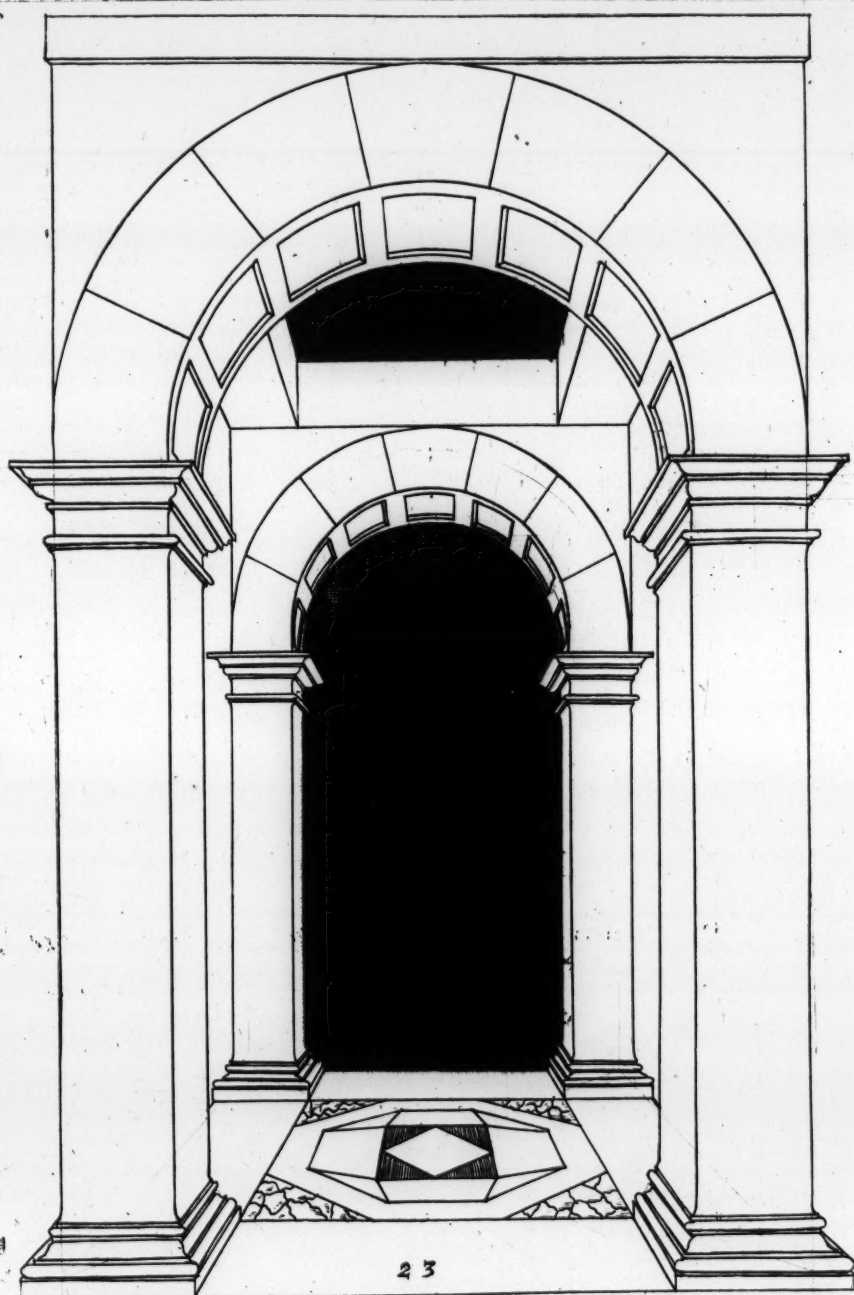














from the other poynts or corners of the black lines ; therefore here I have placed the poynt of the distances and the Horison downward ; and have placed the Pillars in other manner upon this ground without Quadrant stones : In this manner set the bredth of the two first Pillars upon the Base of such thicknesse as you will, and draw them inwards, towards the Horison, then you must imagine the distances, as I have already taught you : and those distances are set on both sides, and on either poynt of the distances you must draw a line both toward the right and left poynt or corner of each Pillar.

These Diagonall lines will not onely shew you the thicknesse of the first or foremost Pillars when they shorten, but also the thicknesse of the two other Pillars which stand inward, which are all marked with pricks (and as I have likewise said before) that which is here said of the Bases of the Pillars, the same also must be understood upward of the Capitalls : touching the thicknesse of the Bowes or Arches underneath, I have shewed in the Figure before, how you must place the Center in the middle of the four crosse-poynt lines, to draw the halfe Circumference : The four square or Quadrant above, is as great as that below on the ground, I need not shew how you shall make it, for you see it plain enough in the Figure.

23 This Figure is like the former, onely that the members of the Bases and Capitalls are added therunto, thereby to make it more perfect unto you, and to shew you how a thing will stand when it is full made and finished, although I have shewed it before, nevertheless, when a man is perfect therein, then he may by practice help himselfe well enough without all this labour, using discretion and bearing in memory that which he hath imprinted in his mind : For in truth, by this means (I mean the ground) a man may by practise make many things, which if they be made with discretion, and by a workman will alwayes beentire the work, as these bowes or Arches doe, which under are divided with Quadrants, as you may see them. There are as you know, first two Centers to forme the Arch underneath, now a wise workman must not alwayes seek for the perfection of the edge of these Quadrants, but for example, say that the Arch underneath is divided into six parts, whereof six shall be for the Quadrant, and two parts for the edge or border that runneth about it : now you must divide the space between the one Center and the other, also in eight parts, but they must shorten or lessen a little, that is, the neather part against the upper, and then the Compasse being set somewhat lower, and made narrower, then you must draw the uppermost border : and then the Compasse being set a little below the neathermost Center, you must draw the other edge or border : after, you must square or divide the Quadrants, leaving the space between both edges broad again as the other, which must be drawn up towards the Horison : and as much as you will make the quadrant hark, you must also draw out of the last Center with the Compasse. And in that manner a man may make divers forms and compartments (but as I have said) you must

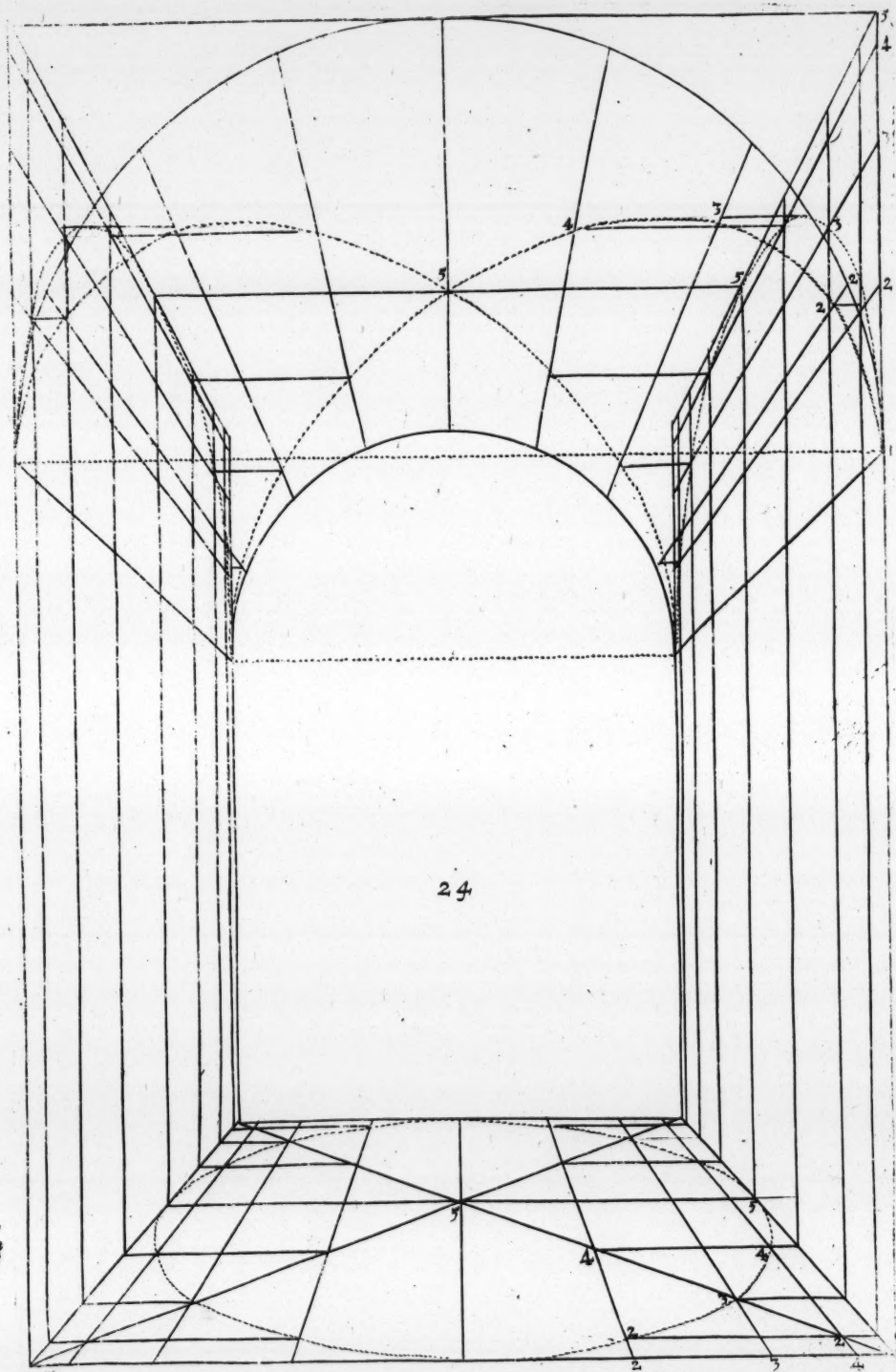
make them all with judgement, and therefore it is very convenient that a man should be well instructed therein; for that using onely the principall terminations, you must make the rest by practise: But I am of opinion, that some rigorous Perspective men will take hold of these my words, (to whom I answer) that if they mean I have failed or done amisse, let them prove what difference there is between saying and doing.

24. The manner how to make a crosse rooffe of a Gallery or House in Perspective work, is alwayes very troublesome to shew it unto any man; and therefore also, it is much more troublesome to declare it in writing for men hereafter to understand it. Nevertheless, because it is very necessary to be known, I will doe the best I can to shew it.

First, you must chuse the bredth and helght of the greatest Arch or Bow that you desire to make, and then by the distances you must make a perfect shortning quadrant, and also a lesse Bow or Arch. The greatest Arch before shall be divided into eight equall parts, and those parts must be drawn towards the Horizon to the small Arch, when being done, then you must set those parts of the greatest Arch below upon the Base; and with the help of the Horizontall and Diagonall lines, you may make a shortning Circle within the quadrant, as in the other places before you have been taught. The terminations hereof shall be 1, 2, 3, 4, 5, which shall be set upwards behind the great Arch, as you may see it there also marked with 1, 2, 3, 4, 5. Without this round below I have drawn the Paralells with prickes on the wall, and where they end, there you must set all your Perpendicular lines upright, which are come out of the Paralell lines of this Circle.

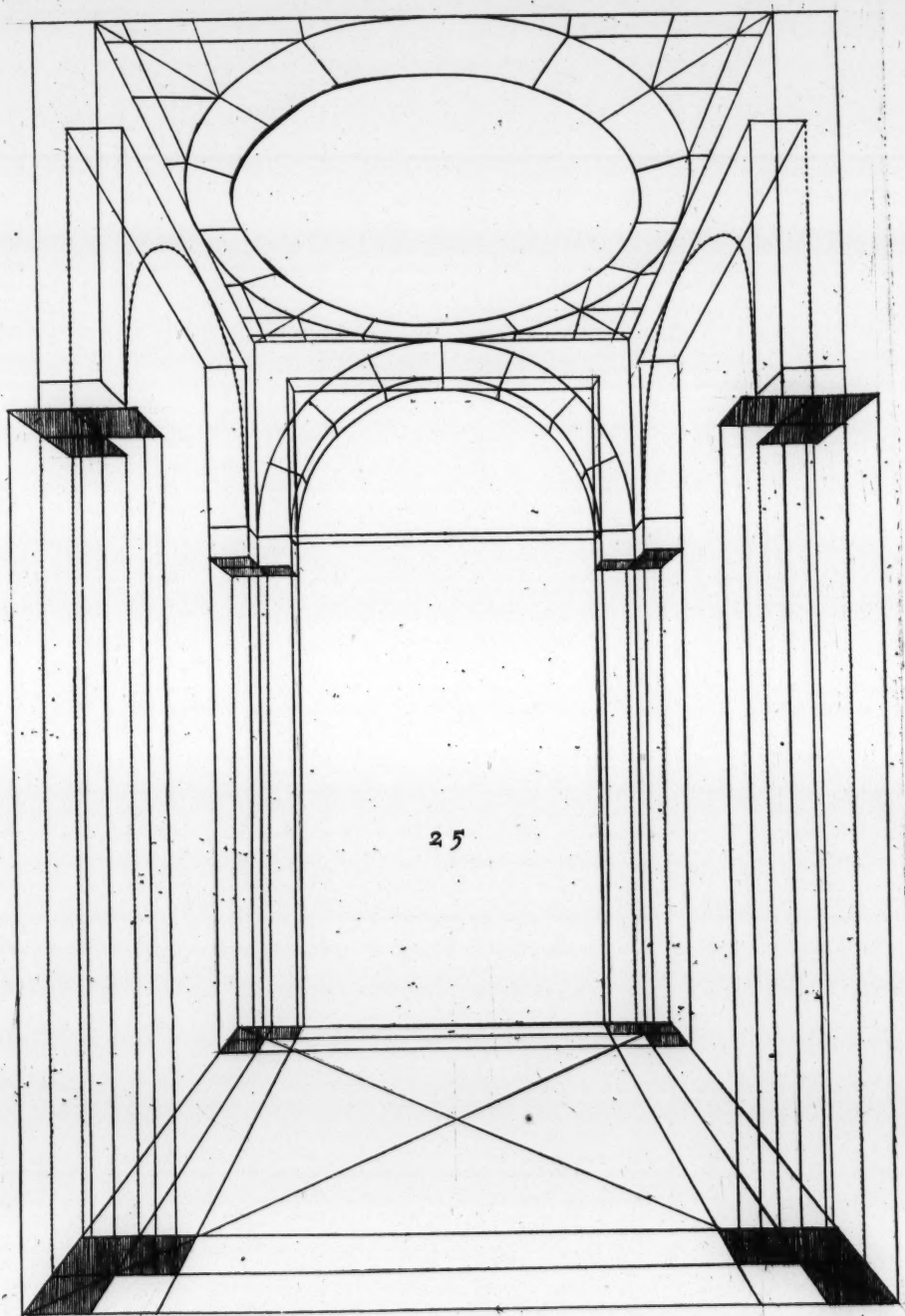
Then you must draw the terminations afore said, which are placed above along by the Perpendicular lines with lines to the Horizon; and where the said Horizontall lines cut through the Perpendicular lines, which are drawn up from below, there you must make halfe a shortning Circle; and that which is marked on this side with C, pphers, must also be understood to stand on the other, as you see it in the Figure.

These two halfe shortning Circles being made, then you must draw a right black line above out of each of the middles, which are marked 5, and where that cutteth through the middlemost line, which goeth from the greatest Arch to the Horizon, there shall be the terminations and also the middle of the crosse work; and then out of all the terminations of the two halfe Circles, you must draw crosse lines on the sides, and where every one of them following an Horizontall, toucheth the Arch marked 2, 3, 4, there the terminations shall stand to forme the halfe Circles in the crosse, through the which a man with a needfull hand from termination to termination shall make a shortning halfe round crosse with prickes, as both on the right and left hand you may plainly see in the Figure. In this manner the work should go, although it stood somewhat out at the sides; but it is better still to print it well in your memory, before you seek an other forme where the Horizon standeth on the



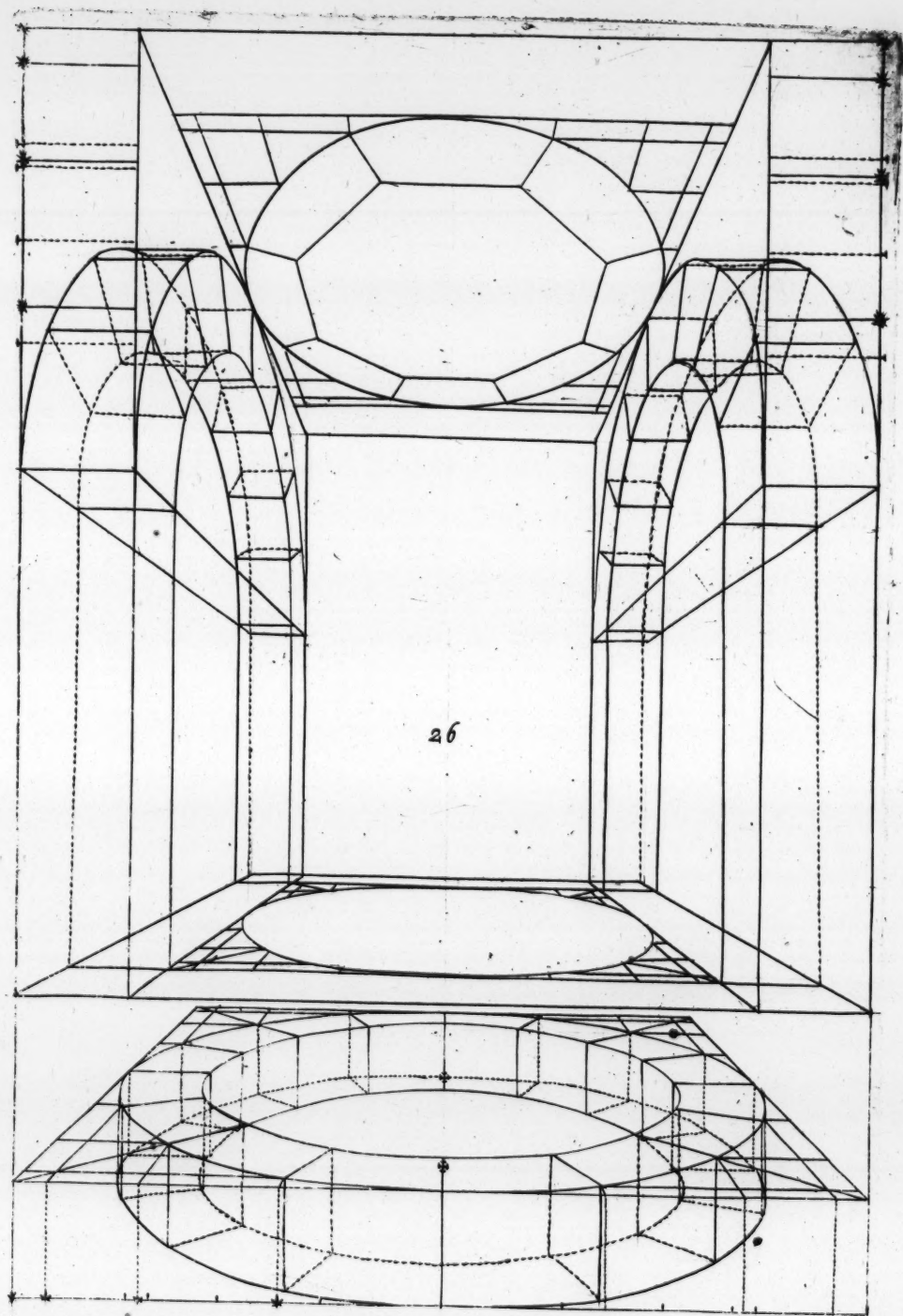






25









one side, that then you may the easier make that which is seen on that side.

25 Having shewed in crosse work on both sides, how you should place the Arches on the sides in shortning manner, and drawn them up out of the ground, although that they be single: now will I shew you a hollow Arch, and the manner how to shorten it: But before I proceed thereunto (for it is very combersome and difficult) first I will shew you the Pilaisters that should carry the said Arches, which Pilaisters stand so plainly in the Figure that I shall not need to take much paines to write of them. In this Figure I have not made the first Arch, that I might not darken the sight of the Archer on the sides, which Arches on the sides, I have also but marked how they shall stand: and are alwayes drawn out of the four-square quadrant, as you see by the order of the four-square quadrant, but the hindermost Arch which standeth not in the way, I have drawn fully, and and placed it also in his four-square.

Above in the top of rooffe, I have made the round forme, whereof you may make a Kettle or Tribunal: and you may also make it thus, when it is somewhat sunk. Touching the four Pilaisters, they (as I have taught before) are found by the Diagonall lines coming from the poyns of the distances, and also that each Pilaister is three cornerd, standing like a three cornerd hook, and on each end (the Arch resteth, whereof there shall be foure) two Arches before, and two on the sides, so that the rooffe will be right four-square, wherein you may make crosse work or other manner of Rooffe work. And if you will make other kindes of works by the same, you must alwayes follow this Rule: Item, where you cannot well understand my Writing, you must help your selves with the Figures, which Figures also standeth open, so that with a little labour, a man may easily conceive it altogether, although there were nothing spoken of it.

26 Now you see, what way you must follow to place Arches on the sides in shortning manner: And first, you must thinke upon the third former manner Superficies, wherein I have sufficiently shewed you the manner how to frame a round body: but in this Figure I will shew it more perfectly. Wherefore a man must imagine that the round Body lying below in his four-square is made, and shall serve for the two Bowes on the sides. This Body then being made (as I have shewed before) and as you see it better now, you must first see it, where the Archer beginneth above the Horizon. And the same Perpendicular line, which first came down from the middle of the four cornerd body, must be like the Parallel lines on the right and left sides, upwards from the two Arches, there (as it is accorded) to direct the Horizontal line, as you may see it plainly in the Figure. But you must also know, that the two Bowes below in this Body, are the two Corners to draw the Lines of the Arches both above and below, that will Centre the Corners of the Bowes upon the Horizontal line within the Arches.

You must also understand, that the black line doe forme the Circumference without, and the points of this line broken the forme within.

within, which is covered in the Arches; so that the Arches do shew through to be made of pieces, of the which pieces a man may learne to make divers Compartments underneath in the Arch. Now when a man can make this Arch well, then he shall not need still to take all this labour, but by two principall lines helping himselfe with prickes, he may frame the Arch; and especially, because that the Arch which should come before, covereth or hideth a great part of the Arches on both sides; which Arch I have not made here, that I might not darken or shadow the other shortning Arch. Neither need I write any thing of the Circumferences above in the top or Rooffe, (nor the eight corners within) for that in the next Figure you shall see them; neither will I speak any thing of the Circumferences in the ground, for they are made (as I have taught you heretofore of all others) and of the round body below (of the which there hath been more said) a man may make many other things which are not here to be spoken of.

27. To place Pillars with their Arches upon grounds or platformes, I think there is sufficient spoken before; and whatsoever I have spoken of four square Pillars, is also to be understood of round Columns, for that a man must take all round things, out of four square things, as well the Spire of the Base, as the round of the Capitall. He that can make all the Figures aforesaid perfectly, and particularly this last body, shall help himselfe well, and not onely to doe the like things, but also many more. If I should in this small Treatise shew all that I could set down, it would make a most great Volume; and peradventure I should want time to set forth the rest of my Book, which I have already promised; for there are many things that belong to Building, which need not to be set down in Perspective work.

Let us now begin to raise the Building here set down out of the ground, which before, and on the side is seen, as I promised before to shew you.

The easiest and surest way is, to make a ground with many quadrants, and imagine that it is more with the Foot, with the Elle, or other measure; but let us now take every quadrant for two foot, and as before there are four quadrants from one Pillar to the other, and the Pillar also containeth a quadrant, there shall also be four quadrants upward in the length from one Pillar the other, as you may see it altogether in the Figure.

The Pillars then being set of such height as you desire, then the the Arches upon them must be made; and the manner how to make them, you may expressly learn in the Figure. And although you cannot see the Arches that are behind them, yet I have made them here that you may see their terminations; they are in some places drawn with full black lines, and in some places with prickes.

Above the Arches you must make the Architrave, Frieze and Cornice; the Profile sure and good, you must make as I have said and taught heretofore, that is, how they shall their Corners against the two Diagonall lines, so by the like rule you shall also make the uppermost Cornice, as you may see in the uppermost part, where the

small





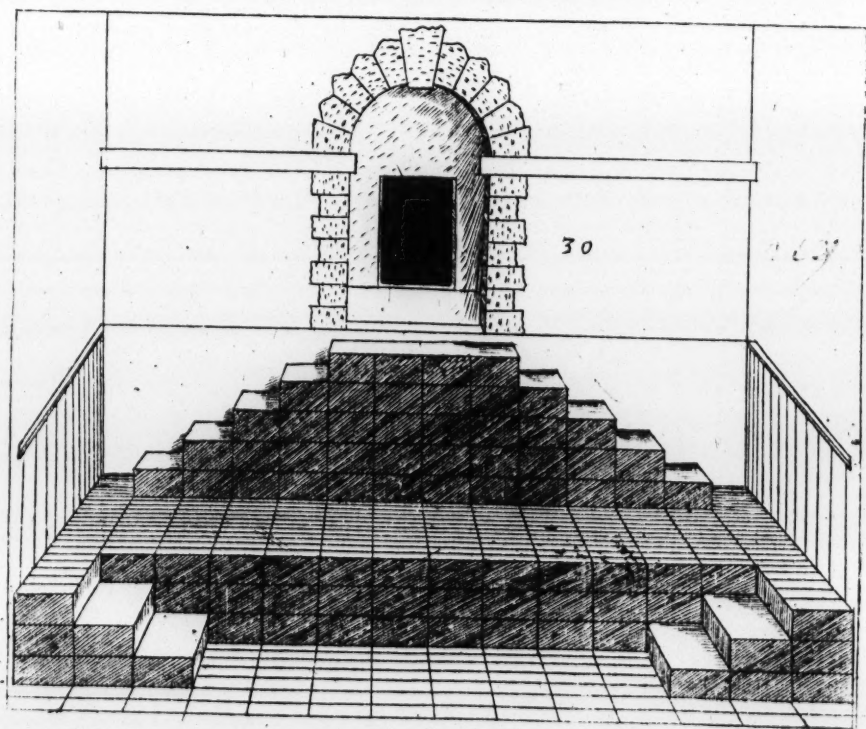
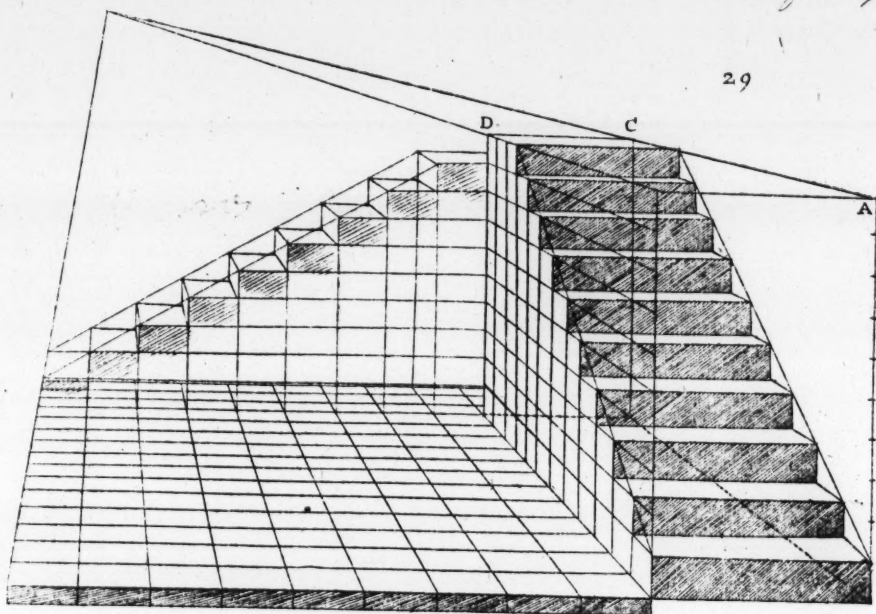


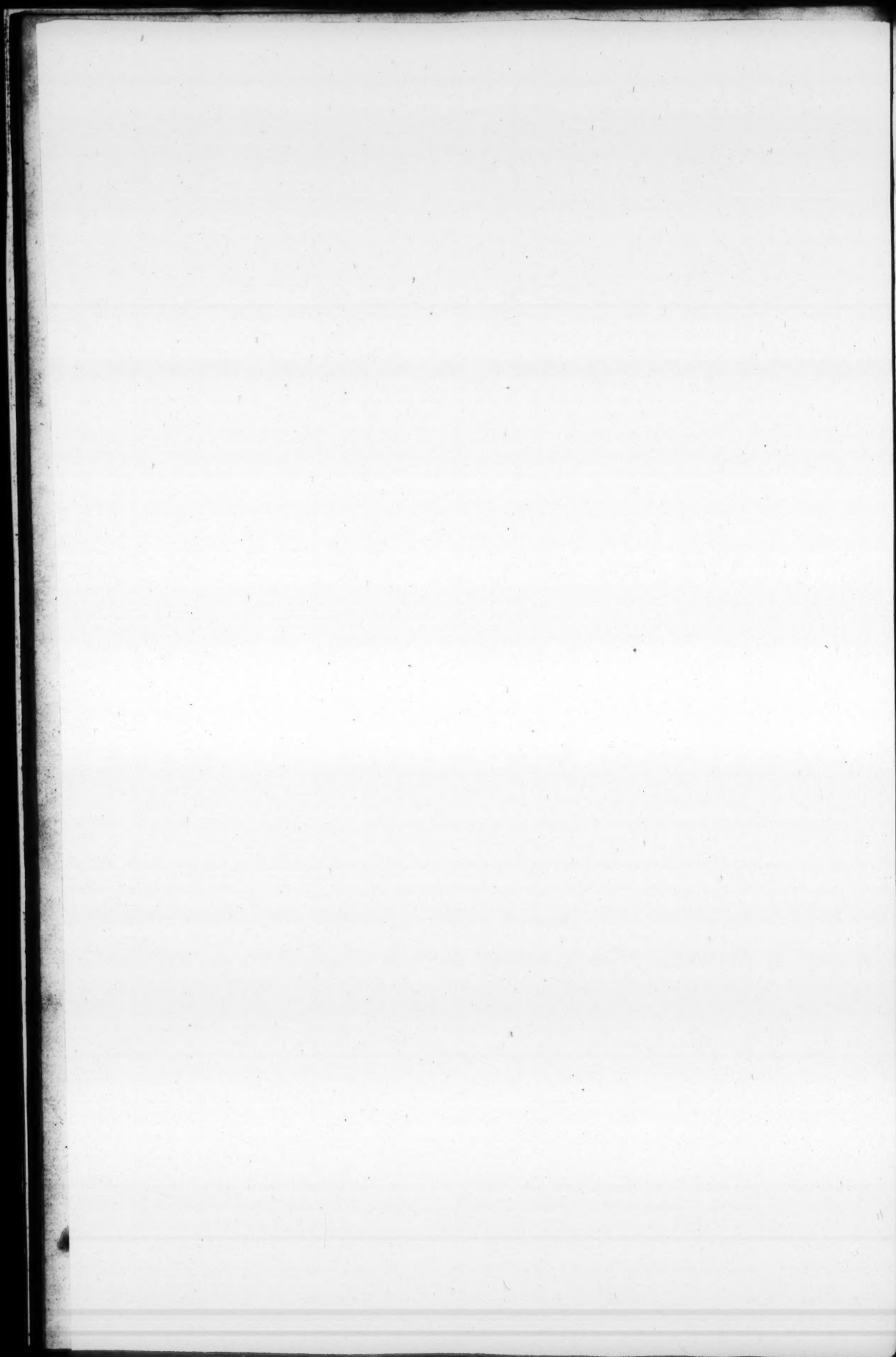




From Brit Lib  
copy

Keep in: Unrest.  
Scribo Sebastian  
O back of page time...  
1657.







small Quadrant with the Diagonall lines stand. The doors that stand under in the Gallery, are each of them two Quadrants broad, and foure Quadrants high: below in the ground there are certain tokens which shew like Nayles, which signify the wide ends of the windows above the Cornice: which windows if they stood whole there, then they would be twice as high as they are broad. There are her Nayles upwards between the shortning Pillars, to shew also the breadth of the shortning Pillars, which (as I said before) are all foure Quadrants high, but they are partly covered with the Cornice. The part of the Arch which standeth at the end, is separated from this Gallery, as the ground also sheweth it is, exactly as before.

I have here made no Bases nor Capitalls, for the other things might not be confounded: but you must understand that they must be placed in the work, as is sufficiently before shewed. And by this Rule you may draw divers Buildings out of the ground, as in the Figure is shewed in divers formes. The Centers of the Arches you see them marked, standing all upon one Horizontall line.

28 Now I have shewed the manner how to make a Gallery with Arches and Pillars with other things thereunto belonging: now by an easier way I will shew some forme of House that are to be built out of the ground. You must make a ground or floor work with quadrants reaching long enough upwards, which quadrants must each of them be reckoned at two foot square.

And first, at the entry of the House there shall be a door of five foot broad, for that it containeth two quadrants and a half within the raising: and the height thereof shall be of ten foot, because it is two quadrants high: Her Pillars or Antepagmentum shall be a foot broad, because they containe a half of a quadrant: the Frieze shall also containe as much: and the Cornice shall containe so much less, as the under part thereof bearing over the Cornice, and shall be made according to the Rule above said. Topping over the part going over the door, the Mouldings or Mouldings shall stand right above the Pillars, or Antepagmentum of the door, and shall be made upon the setting, but here I have shewed the moulding above the lowest door, and shall be two foot broad, and the height of it of this first House, there shall be a window of six foot square, which shall be six foot: you may make it as you please, as you will. But why doe I leave any more to be said, when I have shewed which you may so plainly see in the Figure, and I have shewed the warn such as are the house, that I have shewed, and I have shewed forth out of the ground, could I have shewed more, that is in length, breadth, and height. The length of the house shall be of Rooms, containing seven rooms, and the height of the house shall be of Windows, Doors, Sills, Steps, and the like things. The height consisteth of Piers, Windows, Pillars, Cornices, Capitals, Rooms, and such like things, and the height of the house shall be the thickness of the Walls, Pillars, Capitals, and Cornices. The length is taken from the shortning of the house, and the height is taken from the height of the house, which height is taken from the height of the house.

quadrant, which toucheth it on the hithermost side as it standeth : as also from the hithermost door, which is ten foot high, there you must take the measure from the quadrants, which come to the Parallels on the hithermost corner or poynt of the door ; for if there you take five quadrants in breadth it shall be the height within the Antipagamentum. And that which I have said of these doors, you must also understand of all the other things : The thicknesse of the Wall is two foot, for you see it containeth a quadrant. The bearing over of the second House is of six foot, measured upon the ground : the like also the bearing over or jetting of the first House containeth. To conclude all things, as I have said, rising out of the ground on all sides, I have set no Cornices, nor any other ornaments in this Figure, that you may the easier understand it ; but a man of ripe judgement and understanding knowing the terminations, can by his own invention help himselfe to make faire Buildings. And for that I may not spend to much time herein, I will make others to give you more light therein.

29 The Stayres, degrees or goings up, are very necessary in Buildings, and therefore I will shew divers kinds thereof, and first I will begin with the easiest. According to common custome a stayre or step is about half a foot high, and about a foot broad upon the step ; then let the square sides of this ground be a foot square, therewith we will make a paire of stayres of five foot high, and three foot broad : in the foorst the ground we will take the measure of the breadth, which on the right and left sides shall be set in Perpendicular lines in the Corners of the Stayres, which shall be divided into ten, as the lines A B shew you. Then all the parts of A B shall be raised to the Horizon, and then you shall take nine quadrants upwards in length : and whereas two lines are set up cutting through the Horizon all lines of A B, there the Corner D C of the uppermost step shall be, containing a four-square of the three quadrants on each side. From the hithermost poynt of the same upper steps, you shall draw two beelling lines to the lowest steps, against the which the Horizontall and the Perpendicular lines of the Quadrants shall come together and end up the Stayres.

These Stayres are shewed on the one side, and the other is plain or proff, and containeth a step like in the height, which maketh four foot and a halfe, and also three foot broad, as it is marked under the ground by the Rule. You may make Stayres or degrees as high as you will, and make some resting places in the way : always taking the measure from the foot of the ground, as well of the going up as the coming down.

30 The going up being plain or proff maketh a great shew, and yet are very safe to be in all places, I mean in the turning, and may serve for many things, specially in buildings, whereas man going up easily and with ease, given the beholders a kind of pleasure to view them, especially in populous places, for that there is a going up on either side, so that when the multitude men may goe up, and on the other side they may goe down : and although there are only but two goings up, yet by this a man by his own invention may

may devise others. How these Stayres are made, and with what reason, you may by this Figure perceive them, although I should say nothing thereof; for as it is said before, the quadrants are of a foot broad, and the steps halfe a foot high, and so the breadth of the step is one foot. The breadth of the Stayres is five foot, both the first and second: The resting gate containeth in widenesse three foot, and is six foot high; which although it seemeth to be shut, and a small door opening in it; yet it may be made whole, open, and otherwise closed. The two sides above the three steps are five foot broad, although here it is but one foot, because of the narrowness of the Paper. The Perpendicular lines on the sides, signifie leaning places, and they should serve well also to the steps, but least they should comber the work, I have left them out.

31. Amongst other things which shew well in Perspective work, I find that goings up or Stayres are very seemly, and that the oftner that they turne, the better they doe shew; therefore I have made these two goings up turning, which stand in profill, yet you see the ground and the steps. This first going up is six foot high, and three foot broad, as you may see it marked in the grounds with prickles: the resting place between the first and second going up, is two foure squares long, which is necessary, because of the turning. At the end thereof you find a Portall, the door thereof is two foot wide, the Antipagmentum is halfe a foot on either side, so that the place is three foot full. The Perpendicular lines on the right side of the plane, signifie certain leanings, which may be made of Iron, Wood, or Stone; the like may be made along the Stayres both upward and downward, setting a Baluster upon every Stayre: The Height of this rule or leaning, shall be two foot and a halfe, for so it is easie to lay a mans hand upon. How these Stayres are made upward out of the ground, although it may well be seen by the Figure without declaring it; yet I will say something thereof, to ease them that are short of memory. The resting gate or rolled door under the plane, between the second and the third going up, is no deeper then to the wall: Above the same door there is another going up, of four steps, which to make, I have purposely shewed; otherwise a man should continue the ground at the resting door, to draw them up from it.

32. Touching the several kinds of Stayres, I am assured that they may partly be understood without describing them in writing, and specially the middlemost which goeth up as back stairs, and is still the uppermost ally, Stairs it is called up from the ground as well as the other, and is six foot broad, as you may see and tell it on the ground upon the plane figure. The two Arches under the two goings up are each a row in thickness, whereby a going down is four foot wide, and will be convenient out of the ground at the resting. The other going up, which you see through the Arches, you may fully perceive by them how they are made, and so it is with the two other Stairs on the left hand for from the first step at the resting door, you may easily see how they are raised up out of the ground, and above at the end of them they have a piece of plane ground



ground to come to the other Stayres, which also is drawn up out of the pavement at the rest are, that is, each step halfe a foot high, and a foot broad. But it is hard to measure in so small things, but it sufficeth that hereby you may see the manner thereof; and when you make them great you shall find that they will come well enough to passe. Under the Stayres last named, there standeth also a round door which is five foot wide: upon this ground, and on these Stayres, a cunning Painter might place diuers Figures in severall formes, either standing or sitting upon the Stayres, and lying upon the ground, in shorning manner, and that in this wise: You may place the Figures where you will with feet, and then take six feet or square whereon they stand, and that shall be their height, for that it is the height of a common or ordinary man: this you must observe both before and behinde, and in every place. If the Figure be upon a step, then take the measure of that step whereon it standeth, and make it twelve steps high, which shall be six foot: And if the Figure lying doe the like: but if he lyeth in shorning manner upon the ground, then you must take the length by the shorning quadrant.

33: I have shewed many kinds of goings up, but there are other kinds, and he that is not well instructed in the former will hardly understand these two which I have here set down. The first shall be winding Stayres in four square, and he that can make these four square Stayres, may well make the round Stayres, for it is all one thing, specially if he use the Rule before set down of the round bodies.

The Figure P is the ground of this winding Stayre, but it is much lesse then the uppermost to get ground. This four square ground in shorning you must make halfe a foot high, which shall be for the first step. Then before at either end, you must make a Perpendicular line upright, and in it make as many halfe feet as you desire to make the Stayres high: you must also place the like Perpendicular lines between the middle and the corners: then you must draw the terminations both on the right and the left side upward to the Horizon, which will run through the Perpendicular lines, which are drawn out of the terminations of the steps, and of the same height that the two corner Perpendicular lines are: and of the same matter you must set the other two Perpendicular lines between the corners and the middle. Then in the middlemost termination of the ground you must place an other Perpendicular line, and divide it also in halfe feet, as the other Perpendicular line on the line: From the top of this Perpendicular line of the Center against the nearest Perpendicular line beneath on the left hand, you must frame the first step with two lines: The second step you shall also frame and limit with the Perpendicular line of the Center in the corner following. Then from that point of distance you must draw a line to the Horizon, which against the second Perpendicular line will make the termination of the third step, which shall also be shut above, according to the story and stile: from that point or corner of the step you must also make an Horizontal line, which will touch the

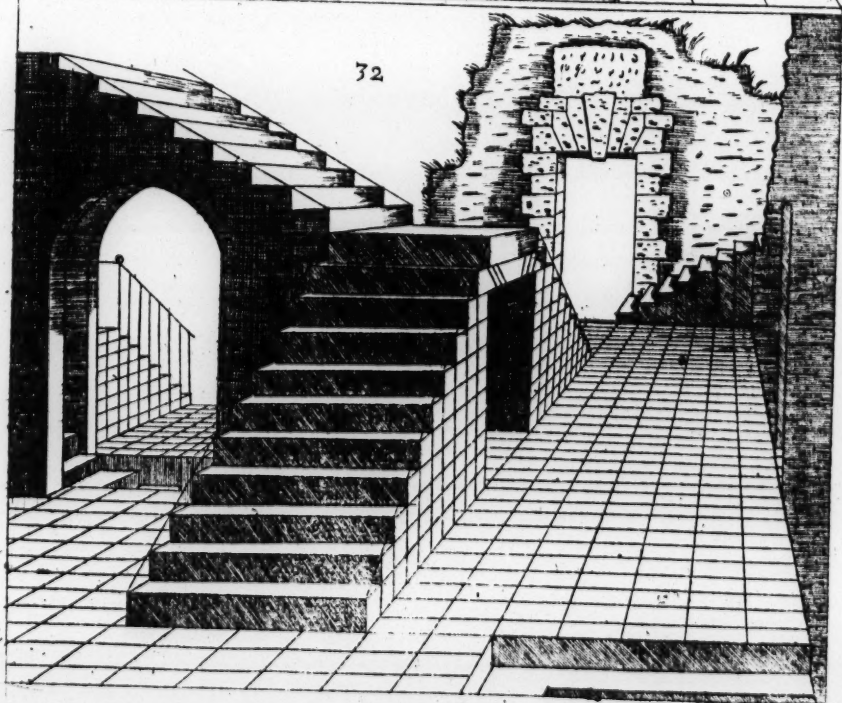
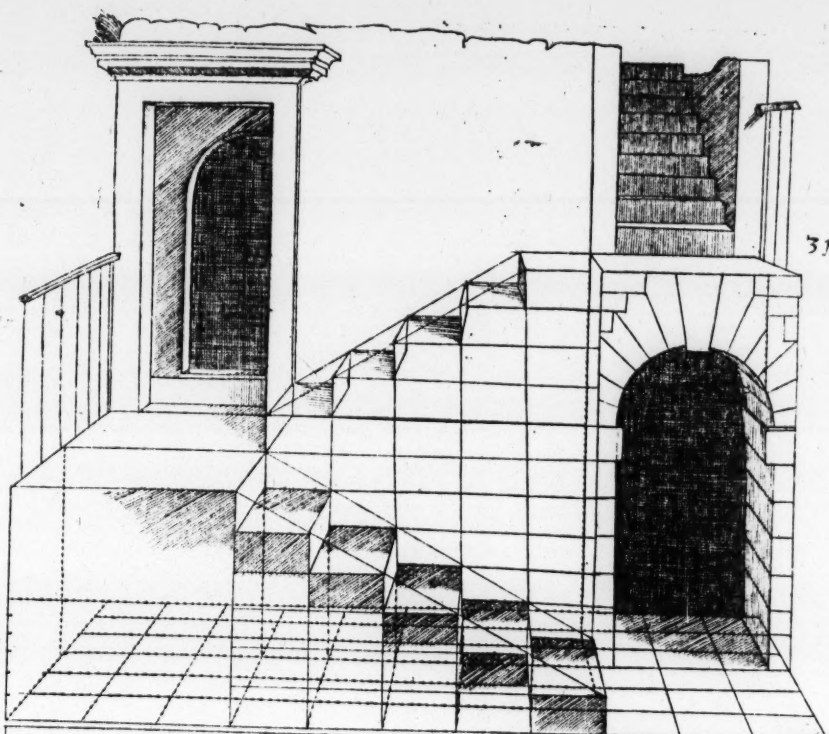


From Brit. Lib. copy

Unsat

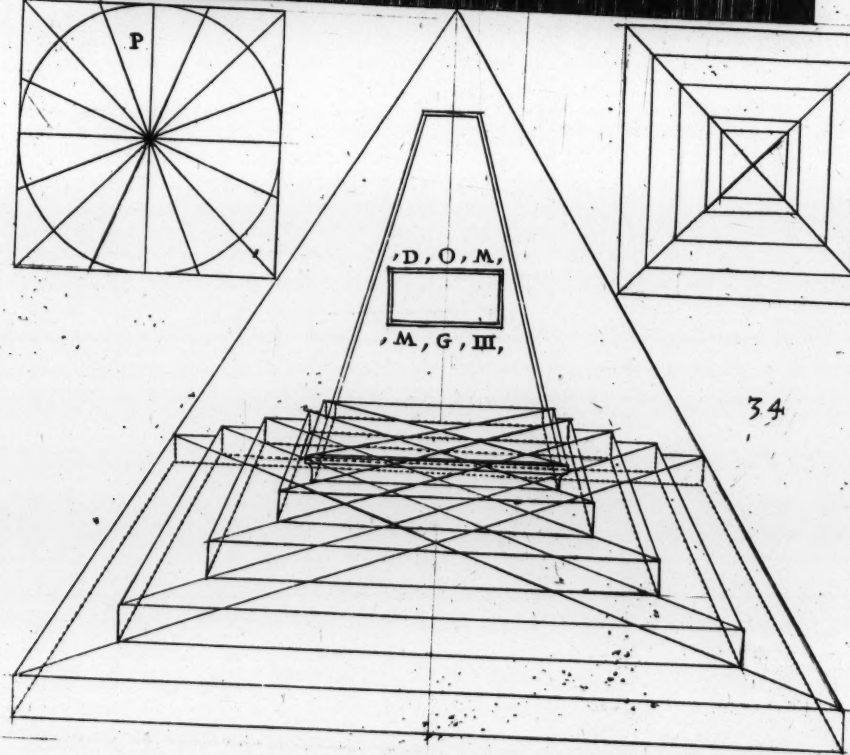
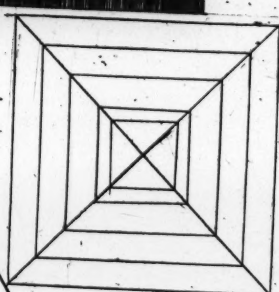
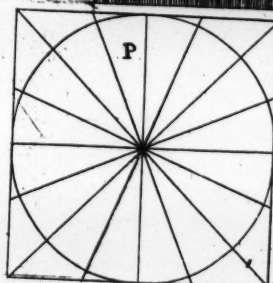
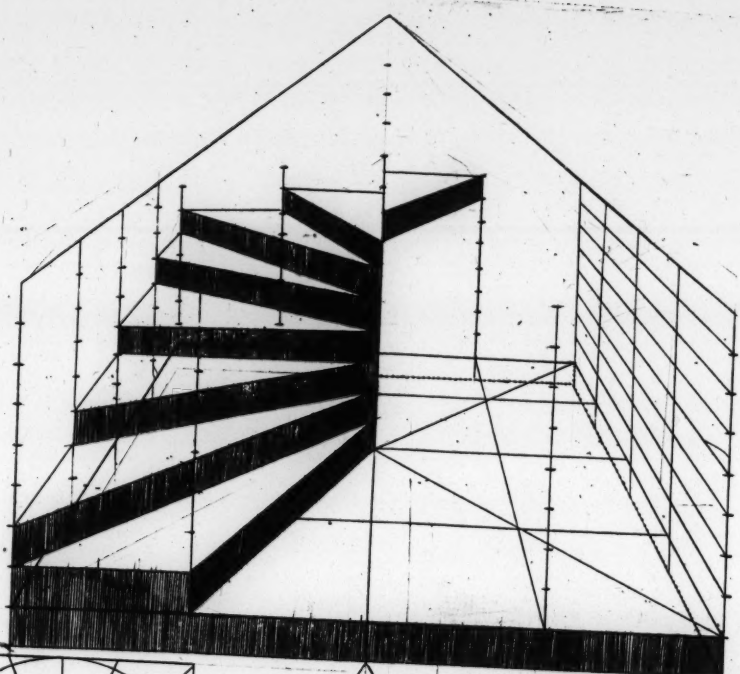
Rep. in: *Sebastien*

*A book of perspective in 1657.*





33

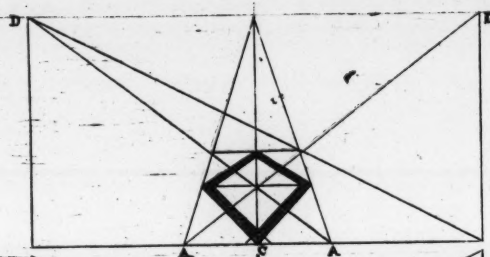


34

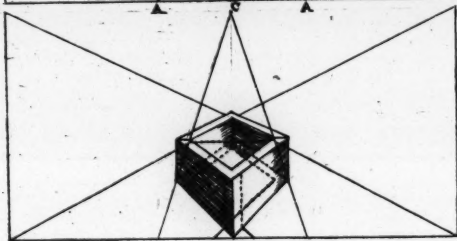




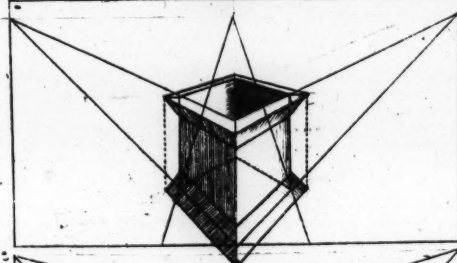




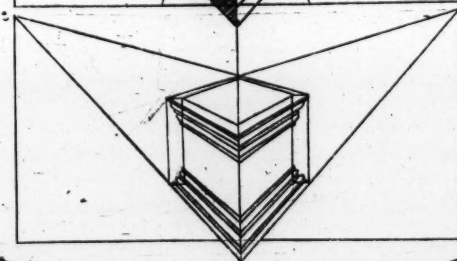
34



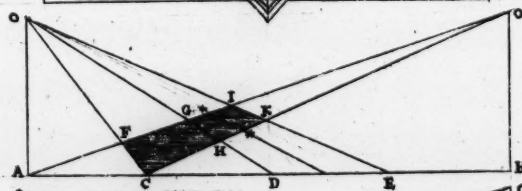
35



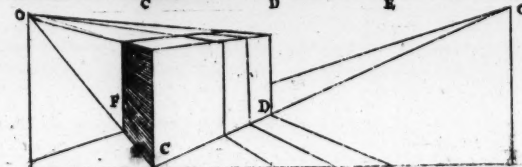
36



37



38



39

the termination of the fourth step : which being closed, then you must raise that corner also to the Horizon, and that will shew you the termination of the fifth step. And when that step is also closed with lines, then you must draw the point towards the Horizon, which line will shew you the termination of the sixth step against the hindermost Perpendicular line : and that being also closed up with lines, then out of the same corner you must draw a Paralell line to the termination of the seventh step, and not towards the Horizon, because it is another side of the four square. Thus you must work round about from step to step, always following this Rule by the which you cannot faile.

24 That I may not forget to set down all kinds of Stayres, and especially such as often times fall out to be made ; therefore I have made these Stayres, whereon a man may goe up on all sides, whereof the ground standeth above on the right hand, but yet very small. These Stayres must be thus made : First, you must make a four-square shortning body of halfe a foot high, upon this you must draw two Diagonall lines, and from the corner inwards there shall be a foot broad left on either side, and the terminations thereof drawn to the Horizon, and so from the Diagonall lines you shall see the corners of the second step. Now I need not set down unto you how you shall find the joining corner of the second step, the which is round about shut up with Paralell and Horizontall lines : then upon the second plaine you must draw two Diagonall lines, which doing (as I said before) will shew you the third step : which also being closed up with lines, you shall also find the fourth and fifth, with the like Rules. This Pyramides is fastallically framed upon them to fill up the place. Also I need not set down to what uses these Stayres may serve, for that the holts of them is commonly found in diverse pieces of work, as the Gates of Pallaces, Churches, and other dwelling Houses, and the ascending up to Altars. By this way also you may make round Stayres, and also Stayres of six or eight corners, as by their formes shewe themselves.

25 I have promised the Reader by this my labour to shew as much of Perspective as I can, and he might thinke his conceits touching Houses or Buildings in Perspective will amount to set downe some simple manner thereof, as he should knowe a single or double ground, the number of the story, and the way with mean to make up and But falling short of my expectation I am returned into a Labyrinth, which perspective is the drawing such which comes to passe by means of houses, the house is drawn in perspective. And therefore, as I have said, I thinke to make an end of my second Book. I have also added hereunto some Rules, which Rule I have called an outward Perspective, which is as well drawn by the Horizon as the inward, as I have said in the Figure, which sheweth a house in perspective, containing in it another four square, the which may be drawn by the distances without further trouble, as I have said in the Figure, and upon the house may be drawn a house. And if you see the like lines of the four square, and the house, and the distances

like

like marked B. And as much more as you will have this four-square to shorten to much you must draw the distances from the Horizon, and as much as you will that the edges of the four-square shall be broad. To many breadths must you draw upon the Base, between A C twice drawn. All the terminations of this four-square standing above the corners goe all to the distances, and none to the Horizon, but onely the four-square that is let therein.

26 Now I have shewed how you should shorten a Superficie, overpoynt, or outward four-square; here I will shew you how to imboile or bear out the body thereof with the same Horizon and distances also, which body within is hollow, and you may heave it up as high as you will; but I have purposely left it somewhat low, that you might see the ground thereof. And by this Figure you may conceive to how many things this may serve; and also how you may increase or diminish it, according to skill and judgement. This shall suffice for these four-square models or hollow things; but I will shew you how you shall make them with Crests or Cornices.

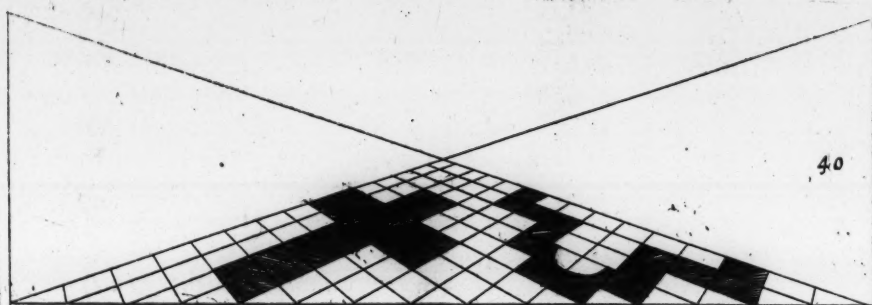
27 This Figure is also formed by the aforesaid Horizon, and the like distances as the other before, onely they stand a little nearer; Now to crest this body both above and beneath, you must imagine the greatnesse of the Crest, and draw the same greatnesse both above and beneath the body; then give the Crests above their due Projection, and from those poynts you must let Perpendicular lines fall to the poynts or corners below, whereby you shall have the Projections of the Base and top thereof, which must be drawn towards the Distances, and not towards the Horizon. Now you see how the Cornices stand without the four-square body; but this is onely for Cornices that are made without members, not to comber you with the shadowing of them, for I will speak of them hereafter particularly.

28 I spake before of Cornices without members, which might serve this hollow Quadran, and now you shall make the termination thereof. Now in this Figure I shew you the said Cornices with their members, which you may also make in other manner as it pleases the workman, that is to make them bigger or lesser, as I have spoken of other Cornices, always using good discretion and judgement in that, and make up members therein, as may shew well in this light. These are those Cornices which reach so far over, that they cannot see the members thereof under them, therefore in that case the members are to be made, that they may be firmly and pleasantly seen in light.

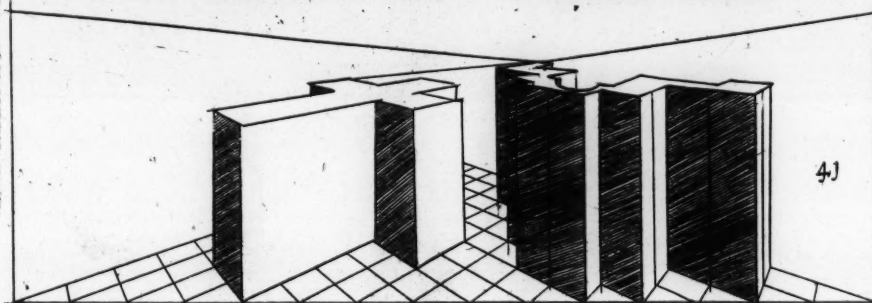
29 The four-square sheweth how their distances equally broad from the Horizon, that is, as much on the one side as the other; but this Figure is of another nature, so that the Horizontall line serve both for Distances, To understand it, imagine this: First the Base A B is made and is divided in four equal parts, by C D E, the lines C D are drawn as the edges, and towards the Horizon, and the lines A C are drawn towards the Horizon on the left side, which forme a perfect shortning four-square, which four-square you see more



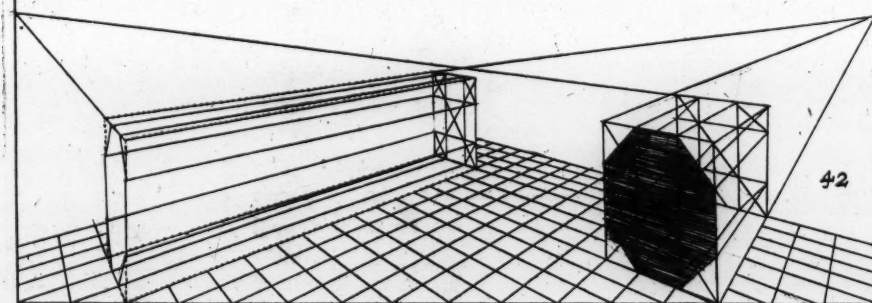




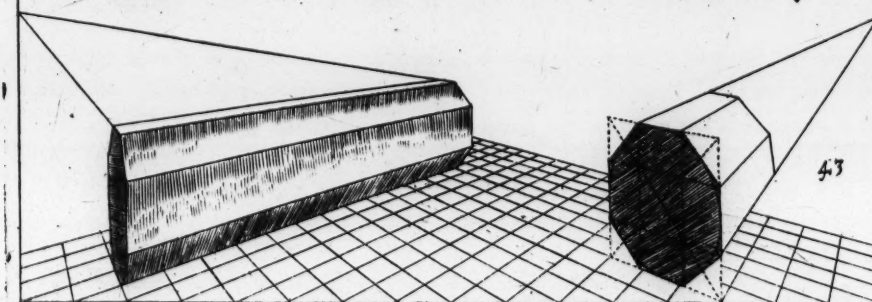
40



41



42



43

on the one side, then on the other. The foure poynts or corners of these foure square things, are F O H C. If you deuide these foure square things in two parts, then you must deuide the Base D E in two parts, and the terminations thereof being drawne to the right side, there you shall finde the halfe of your foure square marked with two Stars. But if you will lengthen it another halfe four-square, then draw a termination E to the right Horizon, the line as I K, the other halfe four-square, so that these Superficies shall be of two perfect four corners. And this will serue the ingenious workman for many things, which I will not here set down for breuery sake.

So This body hereafter following is raised out of the former Figure before let down, and is made with the same Horizon; which body containeth two quadrants in length, and one quadrant in height, for the line  $CD$  is let in Perpendicular manner upon the neermost corner, whereon the other Superficies are let: thus then this body is of two four-squares, I mean two four-squares in length, and one four-square broad and high. And this body (as I said before) shall serve for many things: But if you will have more cubits in the length, then lengthen the Base in so many parts more, and you shall alwayes finde the truth hereof. And if you will make a border or Cresset about this body, then you must follow this Rule aforesaid.

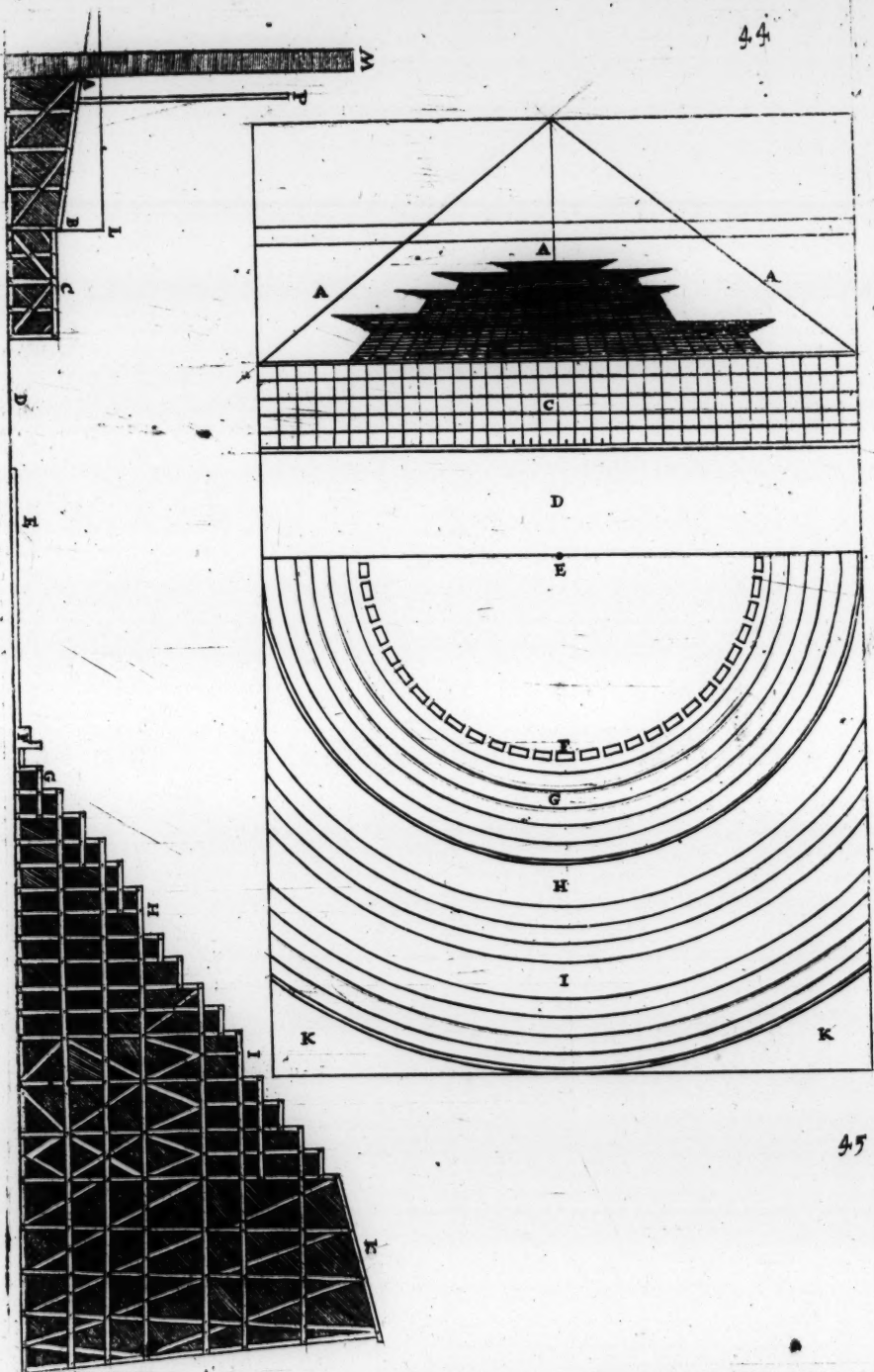
4. But will you make diuers things upon on ground? then it is convenient that first you make a pavement, as you see it here set down, and thereupon frame what you think good upon the quadrans, and the lesse the Quadrants are, and the more in number, you may the easier frame things upon them. The crosse made upon this ground is handy to shew you the way and entry therunto; but for such a forme, you may make a forme of a Christian Church, as they are now built. The other forme by it, sheweth a piece of a foundation of a House, but all these things, you may make in a greater forme, and for that reason, you will sometimes picture the Mark, in all these, in such manner that you may be wiser at the out side, but yet the Christian most frame about our hearts.

\* 42 Out of this superficial Figure for self I have pulled water bodies, to show how the Horizons of them do stand in the world as well above as below, as you shall find by experience, and in truth these works which you lay over the pavements of the Court, contain a Book alone by themselves; but (as I said before) my meaning was to live, but there is little Figure of them, as I will shew you of them, intending to leave the Court and Courtiers, as I have now well assured you that he will not be able to do so, and so I have my self, as I have said, brought into the world, and so I have down.

[illegible]















wards to L, this line shall alwayes be the Horizon, for all the Or-  
 rography of the Houses which shall stand forwards or outwards :  
 But the Seenographies or shortning sides of the Houses, they must  
 have their Horizons standing further to O. And it is reason, which  
 in effect have two sides (as these must be built that men may see out  
 of them on both sides) should happen two Horizon lines, this is  
 touching the Profill of the Scene. But the place which is called  
 Proceny is that which is marked with P, and the part marked with  
 E is called Orchestra, which is raised halfe a foot from the earth ;  
 where you see F marked, are the places for Noblemen and Knights  
 to sit on. And the first seat or step, marked G, are for the Noblewo-  
 men and Ladies to sit on ; and going up higher, there must the mea-  
 ner sort of Nobles sit. The broader place, marked H, is a way, and  
 so is the place marked E. Between H and E must sit Gentlemen of  
 quality. And from L upwards meaner Gentlemen shall sit. But the  
 great space, marked K, shall be for common Officers and other peo-  
 ple, which place may be greater or lesse, according to the length of  
 the Hall or any other place. And the Theator, with the Scene or  
 Scaffold, which I made in *Vincente*, was almost in this sort ; and from  
 the one corner of the Theater to the other, was eight and twenty  
 foot ; for it was made in a place where I had roome enough, but the  
 Scene or Scaffold was not so broad, because it was placed in a lodge.  
 The frame of the seats was all made in one, as you may see in this Fi-  
 gure. And because the Theater stood in an open place which had  
 no wall, whereunto it might be shade fast, therefore in the Circum-  
 ference I have made it sticking out, for the more strength and fast-  
 nesse thereof.

46 Among all the things that may be made by mens hands,  
 thereby to yield admiration, pleasure to sight, and to content the  
 fantasies of men ; I think it is placing of a Scene, as it is shewed to  
 your sight, where a man in a small place may see built by Carpen-  
 ters or Malons, skilfull in Perspective work, great Palaces, large  
 Temples, and divers Houses, both near and far off ; broad places  
 filled with Houses, long streets crost with other ways, triumphant  
 Arches, high Pillars or Columns, Piramides, Obeliscens, and a thou-  
 sand faire things and Buildings, adornaed with innumerable lights,  
 great, middle sort, and small, as you may see it placed in the Figure,  
 which are so cunningly set out, that they shew forth and represent  
 a number of the brightest stones, as Diamonds, Rubies, Saphirs,  
 Smaragdes, Jacinths, and such like. There you may see the bright  
 shining Moon ascending onely with her hornes, and already risen  
 up, before the Spectators are aware of, or once saw it ascend. In  
 some other Scenes you may see the rising of the Sun with his course  
 about the world, and at the ending of the Comedy, you may see it  
 goe down most artificially, whereat many beholders have been a-  
 basht. And when occasion serveth, you shall by Art see a God de-  
 scending down from Heaven ; you also see some Comets and Stars  
 shoot in the skies : then you see divers personages come upon the  
 Stage, richly adornaed with divers strange formes and manners of  
 Apparell both to dance Moriscoes and play Musick. Somerimes

you see strange Beasts, wherein are men and children, leaping, running, and Tumbling, as those kind of Beasts use to doe, not without admiration of the beholders : which things, as occasion serveth, are so pleasant to mens eyes, that a man could not see fairer made with mens hands. But for that we are entred into another manner of Perspective work, therefore I will speak more at large thereof. This Perspective work whereof I will now speak, although it be contrary to those Rules which are shewed before, because these aforesaid are imagined to be upon a flat wall : and this other Rule because it is materiall and imbossed or raised outward, therefore it is reason we observe another Rule therein, according to common custome. First, you must make a Scaffold, which must be as high as a mans eye will reach, looking directly forward ; for the first part thereof which is marked C. But the other part behind it, whereon the Houses stand, you must raise up behind against the wall at least a ninth part thereof, that is, you must devide the plaine Stage or Scaffold into nine parts ; and then you must make the Scaffold higher by a ninth part behind : then before at B, which must be very even and strong, because of the Morisco dancers. This hanging downward of the Scaffold, I have found by experience to be very pleasing, for in *Vincent* which is as sumptuous and rich a Town as any in all *Italy*, there I made a Theater and a Stage of wood, then the which, I think, there was never a greater made in our time, in regard of the wonderfull sights that there were seen, as of Wagons, Elephants, and other Moriscoes. There I ordained, that before the hanging Scene there should be a Scaffold made by water compasse, which Scaffold was 12 foot broad, and 60 foot long, according to the place wherein it stood, which I found to be very pleasing and fit for shew. This first Scaffold, because it was right, therefore the pavement thereof must not obey the Horison, but the Quadrants, whereof on every side were four square, from whence at the beginning of the rising Scaffold B, all the Quadrants went to the uttermost Horison O, which with their due distances doe shorten very well. And for that some men have placed the Horison of this Scio-graphies against the wall right above the Scaffold, whereby it seemeth the Houses run all in one ; therefore I determined to place the Horison before the door, which pleased me so well, that I used the same kind of order in all these kind of works : and so I counsell those that take pleasure in such Arts, to use and esteem this way for the best, as I will shew in this Figure following, and have also declared in the profill of the Theater and Scene.

And because the preparation for Comedies are done in three sorts, that is, Comicall, Tragicall, and Satiricall ; I will first entreat of the Comicall, whereof the Houses must be made as if they were for common or ordinary people, which for the most part must be made under roofs in a Halls, which at the end thereof hath a chamber for the pleasure or ease of the Personages ; and there it is that the ground of the Scaffold is made (as I said and shewed before) in the Profill. Therefore C is the first part being the flat Scaffold ; and suppose that each Quadran containeth two foot on either side,



side, so shall they upon the hanging Scaffold before on the Base be also two foot broad, which is marked B. And (as I said before) my meaning is not to place the Horison hereof against the back behind in the Scaffold, but as far as it is from the beginning of the pavement B to the wall, so far I would also that men shall passe behinde through the wall, and so shall all the houses and other things shew better in the shortning : and when by convenient distances you have drawn all the Quadrants towards the Horison, and shortned them, then you must shorten the Houses right with the four-square stones, which houses are the great lines marked upon the ground, as well for those that stand upright as those that shorten. All such houses I alwayes made of spars, or rafters, or laths, covered with linnen cloth ; making doors and windowes, both before and in the shortning, as occasion tell out. I have also made somethings of halfe planks of wood, which were great help to the Painters to set out things at life. All the spaces from the back to the wall marked A shall be for the Personages, to the which end the hindermost back in the middle shall stand at the least two foot from the wall, that the Personages may goe from the one side to the other, and not be seen. Then you must raise a termination at the beginning of the pavement B, which shall be the poynt L, and from thence to the Horison there shall be a line drawn, as it is marked in the profill with pricks, which shall be of like height, and where that toucheth the hindermost back of the Scene or Scaffold, there the Horison of that back shall stand, and that Horison shall serve onely for that back. But if you stretch a cord or any other thing to the termination L, then you may fasten a thred to it, to thrust backward or forward to use it out of the stedfast Horison, and all the Ortography of the houses before. But the Horison which goeth through the wall shall serve for all the shortning sides of the houses ; and for that men should break the wall, if they would use all this Horison in grosse, which may not be done, therefore I have alwayes made a small modell of wood and Paper just of the same bignesse, and by the same modell set it down in grosse, from piece to piece. But this way will fall out hard for some men to understand, neverthelesse, it will be necessary to work by modell and experiments, and by study a man shall finde the way : and for that a man can hardly find any Halls how great soever, wherein he can place a Theater without imperfection and impediment ; therefore to follow Antiquities, according to my power and ability, I have made all such parts of these Theaters, as may stand in a hall. Therefore the part marked D shall be the post scene, and the circular place marked E shall be the Orchestra : round about this Orchestra shall be the places for the noblest personages to sit, marked F. The first steps marked G for the noblest women to sit upon. The place H is a way, so is the part marked I. In the middle between these degrees are steps the easier to goe up.

The places marked K must be made so great backward as the Hall will afford, which is made somewhat sloping, that the people may see one over the others heads.

47 Touching the disposition of Theaters and other Scenes, concerning the grounds thereof, I have spoken sufficiently; now I will speak of the Scene in Perspective work: and for that Scenes are made of three sorts, that is, Comickall to play Comedies on, Tragicall for Tragedies, and Satirickall for Satirs. This first shall be Comickall, whereas the houses must be slight for Citizens, but especially there must not want a brawthell or bawdy house, and a great Inne, and a Church; such things are of necessity to be therein. How to raise these houses from the ground is sufficiently expressed, and how you shall place the Horison: neverthelesse, that you may the better be instructed (touching the former of these Houses) I have here set down a Figure, for satisfaction of those that take pleasure therein; but because this Figure is so small, therein I could not observe all the measures, but refer them to invention, that thereby you may chuse or make houses which shew well, as an open Gallery, or lodge, through the which you may see another house. The hangings over or shooting out, shew well in shortning work, and some Cornices cut out at the ends; accompanied with some others that are painted, shew well in work: so doe the houses which have great beeing out, like lodgings or Chambers for men, and especially above all things, you must set the smallest houses before, that you may see other houses over or above them, as you see it here above the bawdy house; for if you place the greatest before, and the rest behind still lessen, then the place of the Scene would not be so well filled, and although these things upon the one side be made all upon one floor; neverthelesse, for that you place great part of the lights in the middle, hanging over the Scene or Scaffold, therefore it would stand better if the floor in the midst were taken away, and all the roundells and quadrans which you see in the Buildings, they are artificiall lights cutting through, of divers colours, which to make I will shew the manner in the last of this Book. The windows which stand before, were good to be made of Glasse or Paper, with light behind them. But if I should here write all that I know to serve for this work, it would be overlong to reherse; therefore I refer that to the wit and discretion of those that exercise and practise themselves herein.

48 Houses for Tragedies, must be made for great personages, for that actions of love, strange adventures, and cruell murthers, (as you read in ancient and modern Tragedies) happen alwayes in the houses of great Lords, Dukes, Princes, and Kings. Therefore in such cases you must make none but stately houses, as you see it here in this Figure, wherein (for that it is so small) I could make no Princely Pallaces, but it is sufficient for the workman to see the manner thereof, whereby he may help himself as time and place serveth: and (as I said in the Comickal) he must always study to please the eyes of the beholders, and forget not himselfe so much as to set a small building in stead of a great, for the reasons aforesaid. And for that I have made all my Scenes of laths, covered over with linnen, yet sometime it is necessary to make some thing rising or bulging out, which are to be made of wood, like the houses on the left side, whereof



whereof the Pillars, although they shorten, stand all upon one Base with some stayes, all covered over with cloth, the Cornices bearing out, which you must observe to the middle part: But to give place to the Galleries, you must let the other shortning Cloth somewhat backwards, and make a Cornice above it, as you see: and that which I speak of these Buildings, you must understand of all the the rest, but in the Buildings which stand far backward, the Painting work must supply the place by shadows without any bearing out: touching the artificial lights, I have spoken thereof in the Comiceall works. All that you make above the Roofs sticking out, as Chimneys, Towers, Pyramides, Obelisks, and other such like things or Images, you must make them all of thin boards, cut out round, and well coloured: But if you make any like Buildings, they must stand somewhat far inward, that you may not see them on the sides. In these Scenes, although some have painted personages therein like supporters, as in a Gallery, or do it as a Dog, Cat, or any other Beasts; I am not of that opinion, for that standeth too long without stirring or moving; but if you make such a thing to lie sleeping, that I hold withall. You may also make Images, Histories, or Fables of Marble, or other matter against a wall; but to represent the life, they ought to stir. In the latter end of this Book I will shew you how to make them.

19 The Satiricall Scenes are to represent Satires, wherein you must place all those things that be rude and ridicull, as in ancient Satires they were made plaine without any respect, whereby men might understand, that such things were referred to Rurall people, which set all things out rudely and plainly: for which cause *Varro*, speaking of Scenes, saith, they should be made with Trees, Roots, Herbs, Hills, and Flowres, and with some country houses, as you see them here set down. And for that in our days these things were made in Winter, when there were but few green Trees, Herbs, and Flowres to be found; then you must make these things of Silk, which will be more commendable then the naturall things themselves: and as in other Scenes for Comedies or Tragedies, the houses or other artificial things are Painted, so you must make Trees, Herbs, and other things in these; and the more such things cost, the more they are esteemed, for they are things which stately and great Persons doe, which are enemies to modestie. This have I seen in some Scenes made by *Thomas* *Seely*, for the pleasure and delight of his Lord and Patron *Charles* *Duke of Urbie*; wherein I saw so great liberality used by the Prince, and so good a conceit in the workman, and so good Art and proportion in things therein presented, as ever I saw in all my life before. On good Lord, what magnificence was there to be seen, in the great number of Trees and Fruits, with sundry Herbs and Flowres, all made of fine Silk of divers colours. The water courses being adorned with Frogs, Snayles, Tortoises, Toads, Adders, Snakes, and other beasts: Rooms or Carrs, another of Pavies, and other shells laid and thrust through between the houses, with so many severall and rare things, that if I should declare them all, I should not have

time enough. I speak not of Satires, Nimphs, Mer-maids, divers Monsters, and other strange beastes, made so cunningly, that they seemed to shew as if they went and stirred, according to their manner. And if I were not desirous to be briefe, I would speak of the costly apparell of some Shepheards made of cloth of Gold, and of Silk, cunningly mingled with Imbrochery; I would also speak of some Fishermen, which were no lesse richly appaalled; then the others, having Nets and Angling-rods, all guile; I should speak of some Country maids and Nimphs carelessly appaelled without pride, but I leave all these things to the discretion and consideration of the judicious workman, which shall make all such things as their Patrons serve them, which they must work after their own devices, and never take care what it shall cost.

*Of the Artificial Lights of the Scenes.*

**I** Promised in the Treatise of Scenes to set down the manner how to make these lights shining through, of divers colours, and first I will speak of a pure colour which is like a top Zaphir, and yet somewhat fairer. Take a piece of Salamoniack, and put it into a Barbers Basen, or such like thing, and put water into it; then bruse it softly therein, till it be all molten, alwayes putting more water unto it, as you desire to have it light or sad colour; which does, if you will have it fairer and clear, then straine it through a fine cloth into another vessel, and then it will be a clear Celestiall blew, whereof you may make divers kinds of blew with water. Will you make an Emerald colour? then put some Saffron as you will have it pale or high coloured; for here it is not necessary to prescribe you any weight or measure, for that experience will teach you how to doe it. If you will make a Rubby colour, if you be in a place where you may have red Wine, then you need not use any other thing, but to make it pale with water, as need requireth; but if you can get no Wine, then take Brasill beaten to powder, and put it into a Kettell of water with Allum, let it seeth, and scum it well; then straine it and use it with Water and Vineger. If you will counterfeit a Ballays, you must make it of red and white Wine mingled together; but white Wine alone will shew like a Topaz or a Crisolite: The Conduit or common water being strained, will be like a Diamond, and to doe this well, you must upon a glasse ground frame certaine points or tablets, and fill them with water. The manner to set these shining colours in their places, is thus, Behind the painted house wherein these painted colours shall stand, you must set a thin board cut out in the same manner that these lights shall be placed, whether it be round or square, cornered or ovale, like an Egge; and behinde the same board there shall be another stronger board laid flat behind them, for the bottles and other manner of glasses with these waters to stand in, must be placed against the holes, as it shall necessarily fall out, but they must be set fast, lest they fall with leaping and dancing of the Monicoes. And behind the glasses you must set great Lamp, that the light may also be fixed fast; and if the bottles

or

or other vessells of glasse on the side where the light stands were flat, or rather hollow, it would rather shew the clearer, and the colours most excellent and faire: the like must be done with the holes on the shortning side: But if you need a great light to shew more then the rest, then set a torch behind, and behind the torch a bright Balon, the brightnesse whereof will shew like the beams of the Sun. You may also make glasse of all colours and formes, some four-square, some with crosse, and any other forme with their light behind them. Now all the lights serving for the colours, shall not be the same which must light the Scene, for you must have a great number of torches before the Scene. You may also place certaine candlesticks above the Scene with great Candles therein, and above the candlesticks you may place some vessells with water, wherein you may put a piece of Camphir, which burning will shew a very good light, and smell well. Sometime it may chance that you must make something or other which should seem to burn, which you must wet thoroughly with excellent good Aquavite, and setting it it on fire with a Candle it will burn all over: and although I could speak more of these fires, yet this shall suffice for this time; and I will speak of some things that are pleasing to the beholders.

The while that the Scene is empty of personages, then the workman must have certaine Figures or formes ready of such greatnesse as the place where they must stand will afford them to be, which must be made of past-board, cut out round and painted, signifying such things as you will, which Figures must leane against a rule or lath of wood, crosse over the Scene where any gate, door, or way is made, and there some one or other behind the door must make the Figures passe along, sometime in forme of Musicians with Instruments, and some like singers; and behind the Scene some must play on, upon certaine Instruments, and sing also. Sometime you must make a number of footmen and horsemen, going about with Trumpets, Pipes and Drums, at which time you must play with Drums, Trumpets and Pipes, &c. very softly behind, which will keep the peoples eyes occupied, and content them well.

If it be requisite to make a Planet, or any other thing, to passe along in the Aire, it must be framed and cut out of past-board; then in the hindermost and back part of the houses of the Scene, there must be a piece of wire drawn above in the rooffe of the house and made fast with certaine rings behind to the past-board painted with a Planet, or any other thing, that shall be drawn softly by a man with a black thred from one end to the other, but it must be far from mens sight, that neither of the threds may be seen.

Sometime you have occasion to shew thunder and lightning, as the play requireth: then you must make thunder in this manner, Commonly all Scenes are made at the end of a great Hall, whereas usually there is a Chamber above it, wherein you must roole a great Bullet of a Cannon, or of some other great Ordnance, and then counterfeit Thunder. Lightning must be made in this manner, there must be a man placed behind the Scene or Scaffold, in a high place, with a box in his hand, the cover whereof must be full with  
holes,



holes, and in the middle of that place there shall be a burning Candle placed, the box shall be filled with powder of venis or sulphure, and casting his hand with the box upward the powder flying in the Candle, will shew as if it were Lightning. But touching the beams of the Lightning, you must draw a piece of wire over the Scene, which must hang downward, whereon you must put a squib covered over with pure gold, or shining latten, which you will; and while the Bullet is rolling, you must shoot off some piece of Ordnance, and with the same giving fire to the squibs, it will work the effect which is desired.

It would be overlong if I should speak of all things which are to be used in these affairs, therefore I will leave speaking of Perspective things.

**FINIS.**



